Part 3: Responsiveness Summary

STAKEHOLDER COMMENTS AND DEPARTMENT OF ENERGY RESPONSES

The public comment period for the OU 10-04 Proposed Plan (DOE-ID 2002) began January 28 and ended March 29 for the receipt of written and oral comments. Public meetings on the OU 10-04 Proposed Plan were conducted in Boise on February 7 and Idaho Falls on February 12, 2002. Oral comments were submitted by those attending the meetings. The written comments and the meeting transcripts are available in three INEEL information repositories in the Administrative Record for the OU 10-04 Comprehensive RI/FS. The information repositories are located in the INEEL Technical Library in Idaho Falls, the Albertson Library on the campus of Boise State University, and the University of Idaho Library in Moscow.

Typically, comments received from stakeholders pertaining to a proposed plan are compiled and comments that are similar in meaning are summarized and consolidated. However, because only 29 comments were submitted, each comment is presented below in its entirety. The oral comments are reproduced with minimal editing for clarity. The written comments, with the exception of corrected spelling and punctuation and extremely rare instances of editing for clarity, are presented verbatim. In addition, letters within brackets have been added to some comments to indicate multiple parts. A complete response to each comment is provided. An index to the comments on the OU 10-04 Proposed Plan is provided in Table 37 below.

Table 37. Oral and written comments on the OU 10-04 Proposed Plan.

Name	Affiliation	Comment No.
Oral		
John C. Commander	Concerned Citizen Idaho Falls, Idaho	1
Maxine Dakins	University of Idaho Idaho Falls, Idaho	2
Written		
John Tanner	Coalition 21 Idaho Falls, Idaho	1
John C. Commander	Concerned Citizen Idaho Falls, Idaho	2
Clay Atwood	Concerned Citizen Pocatello, Idaho	3
Maxine Dakins	U of I Engineering and Environmental Dept. Idaho Falls, Idaho	4, 5, 6, 7 and 8

Table 37. (continued).

Name	Affiliation	Comment No.
Wendy Green Lowe	CAB, Environmental Restoration Committee Idaho Falls, Idaho (This group of comments regarding the Proposed Plan was submitted by the CAB for information prior to their official written comment (see comment 19)	9, 10, 11, 12, 13, 14 and 15
Bruce W. Ferguson	President and CEO; Edenspace Dulles, Virginia	16
P. D. Eastman	Concerned Citizen	17
J. C.	Concerned Citizen Pocatello, Idaho	18
T. L. Moran and Friends	Concerned Citizens	19, 20, 21, 22, 23, 24 and 25
Diana K. Yupe	Tribal/DOE AIP Program Blackfoot, Idaho	26
Stanley Hobson	Chair, INEEL Citizens Advisory Board Idaho Falls, Idaho	*

* Comments from Citizens Advisory Board are contained in letter from S. Hobson to K. E. Hain, "Recommendation #92 – Proposed Plan for Operable Unit 10-04: Waste Area Groups 6 and 10," dated March 20, 2002. Responses are contained in INEEL – WAGs 6 and 10 – Operable Unit 10-04 – Response to INEEL Citizens Advisory Board Submittal of "Recommendation #92" (EM-ER-02-057).

Oral Comments Presented at the Public Meetings and DOE Reponses

Idaho Falls Public Meeting

Comment 1: I have been a site employee for pretty close to 40 years. I'm aware that the site has been surveyed for unexploded ordnance on at least four different occasions. And that was during the period from 1993 to 1997. And it appears to me that spending another 16.5 million to find additional UXO doesn't make cost-effective sense. The money would be better spent cleaning up land mines in many countries where death and maiming occur from the land mines on a daily occurrence. We haven't had a death site since the — there has not been one death from the site from unexploded ordnance since the site was started in 1949. Spending 4.3 million TNT and RDX remediation is not necessary. Both of these items are biodegradable. Over a period of 100 years there won't be any trace of those materials. Spending 3.5 million for salt, lead, and copper removal is not cost effective. Solid lead is not easily assimilated by any receptors.

We would be better off to spend that money in the many cities in Idaho that have lead that is ingested and inhaled by the population because it's disposed there as very easily absorbed aerosols from various operations such as smelting and that kind of thing. Let's spend the money where it could be more effectively used rather than where it's not necessary.

Response to comment 1: We agree that many countries have a more serious problem with landmines than we at the INEEL have with UXO. Still, the problem at the INEEL is serious. Although previous removal activities have cleared some surface UXO from a few INEEL areas, the extent of remaining UXO, especially buried UXO, has not been fully characterized and the extent may be considerable. The technology for geophysical surveys, presently the best way to detect buried UXO, is constantly improving. It is anticipated that improved technologies will become available in the future to better define the nature and extent of contamination and locate previously unidentified UXO areas. Since the INEEL will be under government control for many years, geophysical survey over the bombing ranges and the Naval Proving Ground will be postponed until a more cost effective, demonstrated technology becomes available. In addition, a phased approach to remediation for UXO will be developed during detailed planning for remediation. By postponing the large-scale UXO survey and phasing remediation, costs can be reduced.

Biodegradation of TNT and RDX is occurring too slowly to protect human health and the environment. Large fragments of TNT and RDX still exist after more than 50 years of weathering and high TNT and RDX concentrations exist in the soil around the fragments. Failure to take remedial action could result in unacceptable risk to human health and the environment and contamination of the Snake River Plain Aquifer. In addition, the TNT and RDX contamination exists in the flood plain of the Big Lost River. In the event of flooding, significant surface water contamination could occur from contact of flood water with the TNT and RDX contamination at these sites.

The lead at STF-02 can dissolve with exposure to precipitation and eventually leach through the soil to the aquifer. However, this is a very slow process and the soil at the INEEL tends to hold onto metal ions; hence, high concentrations of lead left in place can always present a toxicity problem. Over 60 tons of lead are expected to be recovered from the STF-02 site. Also, with this much lead present in the soil, use of the land for residential, industrial, or agricultural use will be prohibited.

While unacceptable harm from exposure to UXO, TNT/RDX, and lead at the INEEL has not occurred while the site has been under government control, the threat from these remaining contaminants cannot be underestimated. Strict government control at the INEEL since 1949 has successfully prevented

unacceptable public exposure to these hazards. Without remediation and administrative controls to limit exposure and contamination of the environment, including the Snake River Plain Aquifer, unacceptable risk to human health and the environment would result and regulatory requirements would not be met.

Comment 2: [a] I have a couple of comments and most of my concerns came up in the question period. But I guess I share concern about the money that it will cost, and especially related to putting material in the CFA landfill. I can't quite bend my mind around why we would spend $4 million to pick up the soil and dump it in an industrial landfill that is not a hazardous waste landfill. It doesn't have leachate collection. It doesn't eco-protection. To me, that doesn't pass the test. If we're going to dig it up and if it is hazardous, then put it in the ICDF. If we have to wait until the ICDF is ready, then let's wait until the ICDF is ready. If it's not hazardous, why will we spend $4 million to clean it up? I'm also concerned — because the history of environmental regulations is that they get tighter and tighter. We often have to go back and redo things. I am concerned that we might have to go back and dig up the CFA landfill because we dumped stuff in it that we thought was okay today but it might not be okay 10 to 20 years from now.

[b] My concern about the flowchart is a more general concern about ecological work, general at the site. I think that it's been given short shrift at the INEEL for many years that the human-health risks have been really focused on and the ecological risks have been sort of pushed aside. I was on the Citizens' Advisory Board for several years. I was vice chair for one year. I was actually on the CAB when we reviewed these proposed plans that said, "We will defer that site to WAG-10. We will handle that in WAG-10." As I read through this, there are two sites that pose ecological risks that are not due to be touched according to this proposed plan because they don't pose ecological risk. They will be ignored. I look at the flowcharts. I don't see cleanup in there for ecological damage. Human health risk assessments are often criticized, sometimes rightly so, for having human-threat scenarios in the future. Hypothetically, someone is going to live there in 100 years. While I have done risk assessment myself, it is hypothetical, but ecological risks are less hypothetical. There are receptors there now and those risks are there today. So, if you want to get away from hypothetical, look at ecological risk. I guess it's not acceptable to me to toss those off and say we will not clean up just because it's ecological. I will also submit comments in writing.

Response to comment 2 [a]: The ICDF is also considered a viable disposal unit, and preference for disposal in this facility will be given if available when remediation is performed. Disposal in the CFA landfill is also considered acceptable for this waste. While the TNT/RDX soil contamination may be unacceptable from human health and ecological perspectives, the average concentration of all soil that will be removed is expected to be well below levels that require disposal as RCRA regulated hazardous waste. Rather, the average concentration of TNT and RDX in soil to be excavated is expected to meet criteria as nonhazardous industrial waste, and hence would be acceptable for disposal in the CFA landfill. Conditions in the landfill would also be likely to promote biodegradation of the TNT and RDX (i.e., high carbon concentration, higher temperatures from on-going microbial degradation activity, and higher moisture content).

After treatment of soil at the STF-02 site, much of the lead-contaminated soil is expected to be below levels that require management as RCRA regulated waste. All soil will be sampled after treatment and prior to disposal for hazardous waste determination. If the soil is determined to be RCRA regulated for lead then it will be treated and disposed of in an approved landfill, such as the ICDF. If the lead concentration exceeds the final remediation goal, but is not RCRA regulated as hazardous waste, then it may be disposed of without treatment in the CFA landfill. Disposal in the CFA landfill would effectively isolate the contaminants from direct exposure. Migration from the landfill is not expected since factors promoting migration will be reduced.

[b] No significant risk to the environment was indicated by the results of the INEEL-wide ERA. However, because of the amount of uncertainty in the ecological assessment, we are implementing long-term ecological monitoring to ensure protectiveness. The flow chart on page 31 of the Proposed Plan presents the phased approach to ecological risk assessment at the INEEL. The bottommost descriptive box on page 31 (Remedial Risk Assessment) is part of the fourth phase and would be performed if the baseline INEEL-wide baseline had significant risks. This graphic was developed very early in the ERA process. To simplify this graphic, the term "remedial risk assessment" in this context was used to indicate the development and refinement of remediation goals to be achieved, the identification of the contaminant to be eliminated, the delineation of areas to be isolated and removed, and the evaluation of possible damage to the environment possible from the implementation of a remedial action. However, this simplification lost the true meaning, and the INEEL was not intending to ignore any significant risk that may have been shown through the baseline.

Written Comments and DOE Reponses

Comment 1: We of Coalition-21 believe that DOE's efforts to find and remove leftover ordnance in the cleanup of WAG 10 have passed the point of diminishing returns. Few, if any, of the remaining items are in a condition such that they could explode; otherwise they would have been detonated by large animals. The risks of toxic effect from the small amount of explosives, lead, or other ordnance materials, in an area, which will be very lightly used for the foreseeable future, are too small to justify the cost of hunting them down and disposing of them. Costs per unit of the most recently discovered materials disposed of were already too high. The money could be better spent in cleanup elsewhere.

We recommend the no action alternative.

Response to comment 1: Although previous removal activities have cleared surface UXO from a few INEEL areas, the extent of remaining UXO, especially buried UXO, has not been fully characterized, the extent may be considerable, and the risk is considered serious. Any intact UXO present at the INEEL poses a potentially serious physical hazard to humans. Animals are not considered at risk since even large animals typically can not impart sufficient force on UXO at the surface to result in detonation, and buried UXO is not accessible to large animals. Previous removal efforts were focused exclusively on the areas where explosives testing was performed and the metal debris and explosive chemical remnants are visibly obvious. No effort has yet been performed to define the full extent of the boundaries of the impacts from the explosives testing areas or to determine the extent and nature of UXO that may be present from the bombing activities or the Naval gun firing. The technology for geophysical surveys, presently the best way to detect buried UXO, is constantly improving. It is anticipated that improved and cost effective technologies will be available in the future, and that by postponing wide-scale UXO survey and performing remediation in phases over several years, total costs for remediation will be reduced.

Although the use of these sites in the near term may be light, direct exposure to high concentrations of explosive materials, such as TNT and RDX, could still present an unacceptable risk. Leaving the residual TNT and RDX at the site could also result in contamination of the Snake River Plain Aquifer, which would be in violation of Idaho State laws. Additionally, the TNT and RDX contamination is with the flood plain of the Big Lost River, and in the event of flooding, significant surface water contamination could occur.

The lead contaminated soil has been characterized, and the amount of lead contaminated soil is extensive in the berms and surrounding soil at the STF Gun Range (STF-02). The lead at STF-02 can dissolve with exposure to precipitation, leach through the soil, and contaminate the aquifer. However, this is a slow process and the soil at the INEEL tends to hold onto metal ions; hence, high concentrations of lead left in place can always present a toxicity problem. Over 60 tons of lead are expected to be recovered from the STF-02 site. Also, with this much lead present in the soil, use of the land for residential, industrial, or agricultural use will be prohibited.

The no action alternative would not meet the threshold criteria for protection of human health and the environment and compliance with laws. Thus, to ensure adequate protection of human health and to prevent contamination of groundwater and surface water, action is required at the UXO, STF-02, and TNT/RDX sites.

Comment 2: The INEEL site has been scavenged for unexploded ordnance (UXO) on at least four occasions in the past ten years. Spending $16.5M to try to find additional UXO doesn't seem cost effective. The money would be better spent cleaning up landmines in countries where death and maiming due to landmines is a daily occurrence.

Spending $4.3M for TNT/RDX remediation is not necessary, as both of these items are biodegradable. Solid Lead and copper in soil is not a great hazard; not any worse than natural occurring lead and copper. Spending $3.5M is not cost effective. It would be better to address powdered lead from other sources such as smelting and coal fired power plants. The INEEL has been contaminated by artillery and ordnance testing during the 1940s. The site was developed from 1949 to the present and site workers and members of the public (visitors) have not been harmed by exposure to residual ordnance, TNT/RDX or lead from firing range activities. There are many sites in the State of Idaho where $24.3M could be spent more cost effectively to remediate hazardous lead contamination and other dangerous chemical contamination. My recommendation is Alternative 1, No Action.

Response to comment 2: We agree that many countries have a more serious problem with landmines than we at the INEEL have with UXO. Still, the problem at the INEEL is serious. Although previous removal activities have cleared surface UXO from a few INEEL areas, the extent of remaining UXO, especially buried UXO, has not been fully characterized. The extent may be considerable, and the risk is considered serious. Previous removal efforts were focused exclusively on the areas where explosives testing was performed and the metal debris and explosive chemical remnants are visibly obvious. No effort has yet been performed to define the full extent of the boundaries of the impacts from the explosives testing areas or to determine the extent and nature of UXO that may be present from the bombing activities or the Naval gun firing. The technology for geophysical surveys, presently the best way to detect buried UXO, is constantly improving. It is anticipated that improved and cost effective technologies will be available in the future, and that by postponing wide-scale UXO survey and performing remediation in phases over several years, total costs for remediation will be reduced.

Biodegradation of TNT and RDX is occurring too slowly to protect human health and the environment. Large fragments of TNT and RDX still exist after more than 50 years of weathering, and high TNT and RDX concentrations exist in the soil around the fragments. Failure to take remedial action could result in unacceptable risk to human health and the environment and contamination of the Snake River Plain Aquifer. Additionally, the TNT and RDX contamination is with the flood plain of the Big Lost River, and in the event of flooding, significant surface water contamination could occur.

The lead at STF-02 can dissolve with exposure to precipitation, leach through the soil, and contaminate the aquifer. However, this is a very slow process and the soil at the INEEL tends to hold onto metal ions; hence, left in high concentrations the lead can always present a toxicity problem. Over 60 tons of lead are expected to be recovered from the STF-02 site. Also, with this much lead present in the soil, use of the land for residential, industrial, or agricultural use will be prohibited.

While unacceptable harm from exposure to UXO, TNT/RDX, and lead at the INEEL has not occurred while the site has been under government control, the threat from these remaining contaminants is a concern. Certainly government control of the INEEL since 1949 has prevented unacceptable public exposure to these hazards. However, without remediation and administrative controls to limit exposure and contamination of the environment, including the Snake River Plain Aquifer, unacceptable risk to human health and the environment would result and regulatory requirements would not be met.

Comment 3: Sites not requiring Institutional Controls or 5-year reviews: EBR-15: EBR-1 Radionuclide Soil Contamination. What is the contamination, and how bad is it?
BORAX-04: BORAX TRASH Dump. I think all trash dumps not meeting new EPA guidelines should be cleaned up and put into approved trash sites.

Response to comment 3: The EBR-15, EBR-1 Radionuclide Soil Contamination, site was remediated during the OU 10-06 Non-Time Critical Removal Action (NTCRA) in 1995. This activity included excavation of radionuclide-contaminated soil from all detectable sources within the EBR-I perimeter fence. All radionuclide-contaminated soil removed from the EBR-15 excavation was placed in covered dump trucks and delivered to the Test Reactor Area (TRA) Warm Waste Pond. Cleanup was based on preliminary remediation goal (PRG) concentrations calculated in the Engineering Evaluation/Cost Analysis for OU 10-06. Verification samples collected after the excavation was complete showed only residual Cs-137. All concentrations were less than the Cs-137 PRG of 16.7 pCi/g (the highest detected concentration was 11.3 pCi/g).

The BORAX-04, BORAX Trash Dump, was a trash dump; however, D&D removed all the waste in 1985. As part of the Track 1 decision document, project managers proposed that No Action was appropriate for the site because residual contaminant levels were low.

Comment 4: The use of the CFA landfill for TNT/RDX and lead contaminated soils makes no sense. If these materials warrant the expenditure of millions of dollars to remove them, then they should be placed in a hazardous waste landfill such as ICDF or they should be treated prior to disposal. The use of the CFA landfill for hazardous materials may result in a future cleanup action of that site if regulations change.

Response to comment 4: The ICDF is also considered a viable disposal unit, and preference for disposal in this facility will be given if available when remediation is performed. Disposal in the CFA landfill is also considered acceptable for this waste. While the TNT/RDX soil contamination may be unacceptable from human health and ecological perspectives, the average concentration of all soil that will be removed is expected to be well below levels that require disposal as RCRA regulated hazardous waste. Rather, the average concentration of TNT and RDX in soil to be excavated is expected to meet criteria as nonhazardous industrial waste and, hence, would be acceptable for disposal in the CFA landfill. Conditions in the landfill would also be likely to promote biodegradation of the TNT and RDX (i.e., high carbon concentration, higher temperatures from on-going microbial degradation activity, and higher moisture content).

After treatment of soil at the STF-02 site, much of the lead-contaminated soil is expected to be below levels that require management as RCRA regulated waste. All soil will be sampled after treatment and prior to disposal for hazardous waste determination. If the soil is determined to be RCRA regulated for lead then it will be treated and disposed of in an approved landfill, such as the ICDF. If the lead concentration exceeds the final remediation goal, but is not RCRA regulated as hazardous waste, then it may be disposed of without treatment in the CFA landfill or the ICDF. Disposal in the CFA landfill or the ICDF would effectively isolate the contaminants from direct exposure. Migration from the landfill is not expected since factors promoting migration will be reduced.

Comment 5: Alternative 4b appears attractive for the TNT/RDX soils and costs about the same. It also could result in technology development for the INEEL.

Response to comment 5: Alternative 4b – composting, is a treatment method that is very cost-effective for very highly contaminated soils (>10,000 ppm TNT) when direct disposal is not an acceptable alternative. Very highly contaminated TNT/RDX soils typically result from manufacture of TNT and

RDX, not from periodic detonation experiments such as occurred at the INEEL. On the average, soil to be removed during remediation of the TNT/RDX sites at the INEEL is expected to be within 400 to 600 ppm, which is well below direct disposal criteria of 100,000 ppm. Composting of TNT/RDX contaminated soil under 4b is a very conventional, established, and proven technology. Additional technology development would not be required to treat the INEEL TNT/RDX contaminated soil.

Comment 6: A number of non-conservative assumptions were made in the Sitewide ecological risk assessment, for example areas that pose substantial ecological risks were excluded: specifically WAG 7 and the Tank Farm soils.

Assumptions listed on page 31:

1. "assumed that contamination from past activities at the WAGs would be fairly confined to within the fencelines of the WAGs." But the ANIMALS MOVE.

2. "recent CERCLA cleanup activities have or will remove and/or stabilize most of the contamination within the WAG sites." Except at 28 sites that are being ignored plus the areas that were excluded like WAG 7 and the Tank Farm.

3. "Assumed that no sensitive species were present at the site and that a population model would be adequate." This is inconsistent with the sidebar on page 10. Population modeling is not sufficient for the species listed there.

Response to comment 6: [a] To delineate an area for the spatial analysis in the INEEL-wide ERA, the assumption was made that the contamination had not moved beyond the WAG fences. Initially, the boundary was set wider as discussed in the Guidance Manual (VanHorn et al. 1995). The size of this area was set conservatively large for initial assessments at the WAGs and was subsequently reduced for the INEEL-wide ERA based primarily on the following rationale based on sampling and modeling.

First, assessments, as presented in Appendix H4 (DOE-ID 2001) and discussed in *The Guidance Manual for Conducting Screening Level Ecological Risk Assessments at the INEL* (VanHorn et al. 1995), indicate that radionuclides have been present in animals outside the WAG fences. Primarily, these studies have been conducted at the INEEL by the INEL Radioecology and Ecology Program, established in 1974 (Appendix C, VanHorn et al. 1995). The majority of these studies evaluated exposure to radionuclides at SL-1, TRA Warm Waste Ponds, Idaho Nuclear Technology and Engineering Center (INTEC), and Subsurface Disposal Area (SDA) during the 70s and 80s. The Warm Waste Pond and SL-1 were remediated in the mid 1990s, and the addition of soil and recontouring at the SDA eliminated exposure to ecological receptors. At INTEC the concern was for the plume from nuclear fuel reprocessing. but this activity is being phased out. To determine if further contamination is occurring, DOE sampled animals road-killed on- and off-Site for radionuclides in 2001. All detections were within historical values and can be attributed to worldwide fallout (ESER 2002). Additionally, OU 10-04 sampling at INTEC during 1997 (Appendix D1 of the OU 10-04 Work Plan [DOE-ID 1999]) and BORAX during 2000 (Appendix H3 [DOE-ID 2001]), although limited, did not indicate movement of contaminants from the sites.

Second, Appendix H5 (DOE-ID 2001) containing the Modeling Deposition of Contaminants Resuspended During TRA Warm Waste Pond Remediation, evaluated the possibility that contaminants were moved by the wind during the remediation of the Pond. This assessment indicated that very limited movement may have occurred, primarily during the remediation of the TRA Warm Waste Pond. This evaluation was considered a worst case scenario for all other WAGs across the INEEL.

Based on this information, it was determined that the extent of contamination spread from the WAG areas was limited and the resulting spatial areas could be reduced. Also, an important consideration is that the area evaluated would have to increase greatly based on the overall size of the INEEL before it would significantly contribute to the assessment. However, it is recognized that this assumption has a significant amount of uncertainty and that the risk assessment has taken a somewhat simplistic view of the possible movement of contaminants in the system. Therefore, long-term ecological monitoring is planned to address this uncertainty and other uncertainties in the assessment.

[b] It is important to remember that of the 596 potential release sites identified at the INEEL over 70% have been subjected to cleanup or determined not to require cleanup (February 2002 presentation on Progress to Cleanup [cleanuphttp://www.inel.gov/information/publicbudgetbriefing2_13_02.pdf]). It is agreed that some sites have not been subjected to cleanup that may have hazard quotients that indicate risk to ecological receptors.

The statement in the Proposed Plan is, "It also assumed that recent CERCLA cleanup activities have removed or will remove and/or stabilize most of the contamination within the WAG sites eliminating exposures detected by past radiological biotic studies." This refers to the sites discussed in the response to comment 6a above and the associated studies. As stated previously, the majority of these studies evaluated exposure to radionuclides at SL-1, TRA Warm Waste Ponds, INTEC, and Subsurface Disposal Area (SDA) during the 70s and 80s. Most of these study sites have since been subjected to cleanup or stabilized. The Warm Waste Pond and SL-1 were remediated in the mid 1990s, and the addition of soil and recontouring at SDA eliminated exposure to ecological receptors. At INTEC the concern was for the plume from nuclear fuel reprocessing. but this activity is being phased out.

The Proposed Plan stated that HQs are greater than 10 at 68 sites evaluated in the INEEL-wide ERA. At 28 of the 68 sites, remediation is in progress or complete. Many of the remaining sites have localized or low levels of contamination. These sites are not being "ignored." They were summarized in the OU 10-04 ERA (Appendices in H [DOE-ID 2001]) and will be used (with other site information, such as location of sensitive species – Appendix H7 [DOE-ID 2001]) to determine the contaminants and locations for long-term ecological monitoring and sampling. WAG 7 and the Tank Farm are being assessed separately. When their assessments are finalized and the final remediation is selected, the results will be integrated into the long-term ecological monitoring as appropriate.

[c] A list of species that are potentially present at the INEEL and identified on federal, state, BLM and USFS lists were summarized in the sidebar of the Proposed Plan. This list is a summary taken from Table F-2 of Appendix F (DOE-ID 2001). Since their ranges overlap the INEEL, these species were included as possibilities to be considered for field surveys and for evaluation in the risk assessment. However, based on the discussion below and as documented in the OU 10-04 Comprehensive RI/FS (DOE-ID 2001), it was felt that a population model would be adequate to assess the risk to species at the INEEL.

Federal status is the only driver for evaluating risk to individual animals or plants versus the population. Of the 11 plants listed in the Proposed Plan, only Ute ladies' -tresses have federal status as Listed Threatened (LT). It was not evaluated further since there is no documented siting on the INEEL. Ute ladies' -tresses is a wetland forb in the orchid family, found in areas that are seasonally flooded. Current populations are reported for stream terraces, islands in rivers, and edges of lakes and ponds. Desirable habitat for this plant does not exist in any of the WAG areas.

Of the 20 birds listed in the Proposed Plan, only the bald eagle is listed threatened (LT). A migratory species, the bald eagle is not present year round at the facility, but winters on the INEEL in small numbers and is then regularly seen at the northern and western edges of the INEEL. However, bald eagle exposure is bounded by the assessment performed on the ferruginous hawk, whose exposure is greater since it is present at the site for a longer duration and is known to nest on the INEEL.

Of the mammals listed in the Proposed Plan, only the wolf is federally listed as an endangered/experimental population (LE/XN). Anecdotal evidence indicates that isolated wolves may occur on the INEEL. However, no information exists to substantiate that wolves hunt or breed on-Site (Morris 1998). Currently, the wolf is under consideration for delisting.

Of the 3 reptiles and amphibians, 1 insect, and 1 fish discussed in the report, none are federally listed.

Biological surveys identified WAG areas and sites of concern where these species may be present or there is habitat to support these species. Appendix H7 (DOE-ID 2001) contains the biological field survey results for the 20 most common species of concern including the bald eagle, burrowing owl, peregrine falcon, trumpeter swan, black tern, white-faced ibis, ferruginous hawk, northern goshawk, loggerhead shrike, gray wolf, Merriam's shrew, Townsend's western big-eared bat, long-eared myotis, small-footed myotis, northern sagebrush lizard, Lemhi milkvetch, plains milkvetch, winged-seed evening primrose, and spreading gilia. This is summarized in the report, "Potential Use by Sensitive Species of Habitats Within and Surrounding Facilities at the INEEL," and is also contained in Appendix H7 (DOE-ID 2001).

The presence of these species and known habitat will be taken into account during activities at the facilities and during development of a long-term ecological monitoring plan.

Comment 7: The flow chart on page 31 shows an endless loop from monitoring to risk assessment with no path toward remediation. This is one more piece of evidence that the INEEL intends to do no remediation for ecological risks.

Response to comment 7: No significant risk to the environment was indicated by the results of the INEEL-wide ERA. However, due to the amount of uncertainty in the ecological assessment, we are implementing long-term ecological monitoring to ensure protectiveness. The flow chart on page 31 of the Proposed Plan presents the phased approach to ecological risk assessment at the INEEL. The bottommost descriptive box on page 31 (Remedial Risk Assessment) is part of the fourth phase and would be performed if the baseline INEEL-wide baseline had significant risks. This graphic was developed very early in the ERA process. To simplify this graphic, the term "remedial risk assessment" in this context was used to indicate the development and refinement of remediation goals to be achieved, the identification of the contaminant to be eliminated, the delineation of areas to be isolated and removed, and the evaluation of possible damage to the environment possible from the implementation of a remedial action. However, this simplification lost the true meaning, and the INEEL was not intending to ignore any significant risk that may have been shown through the baseline.

Comment 8: If my reading of this is correct, 28 sites still have significant ecological risks attached to them that will not be cleaned up. That is unacceptable.

> Human health risk assessments are often criticized as being hypothetical and based on future scenarios. Ecological risks are more real in the sense that the receptors are there now and that real pathways exist.
>
> Both your own studies and the tribal analysis show species to be in decline across the Great Basin. This is an opportunity to address this, at least in this area.
>
> Be proactive in managing the habitat that exists at the INEEL. Cleanup contaminated areas. Address habitat concerns where possible. Search for funding outside of EM if necessary.

Response to comment 8: Comment noted. DOE is concerned about the environment at the INEEL and is actively protecting this important resource. Understanding that this is an important habitat and that the uncertainty associated with the ecological risk assessment process may be significant, DOE is implementing long-term ecological monitoring.

Comment 9: Page 8 explains the cancer risks associated at the TNT/RDX Contamination Sites but does not discuss the risks associated with a possible explosion. What is the probability of an explosion associated with residual unexploded ordnance and what would be the impacts or such an explosion?

Response to comment 9: It is unlikely that the TNT/RDX contamination in the soil or fragments of TNT and RDX will pose an explosive hazard. The major concern is that TNT is a possible human carcinogen. The document, *Testing to Determine Relationship Between Explosive-Contaminated Sludge Components and Reactivity*, AMXTH-TE-CR-86096, U.S. Army Toxic and Hazardous Materials Agency, January 1987, documented testing performed by the army of soil/sediment containing varying concentrations of RDX and TNT. It concluded that explosives contaminated soil/sediment containing 12% explosives or less will not propagate a detonation or explode when heated under confinement. The highest detection at the site has been approximately 25,000 mg/kg, which is approximately 2.5 % by weight. The fragments of pure TNT and RDX could possibly be made to explode given a robust initiating event such as heat (as in a range fire), physical shock (as in being placed on an anvil and struck with a hammer), or high speed penetration (as in being shot with a rifle bullet), but it is very unlikely for the fragments to spontaneously explode while laying on the ground or being handled casually.

Comment 10: Page 14 explains that all of the Waste Area Group (WAG) 6 sites and a majority of WAG 10 sites fall within an area of the INEEL that has already been designated for continued industrial use. Why then were the risk assessments conducted assuming residential end-states (i.e., ingestion of homegrown produce)?

Response to comment 10: Land-use projections incorporate the assumption that the INEEL will remain under government management and control for at least the next 100 years and will be designated for continued industrial use. However, management and control becomes increasingly uncertain over this time period. Therefore, as agreed upon with the DOE-ID, EPA, and IDEQ, the baseline risk assessment uses a hypothetical residential scenario beginning in 100 years to ensure a conservative approach. The risk assessment was conducted using the residential scenario because this approach is considered the most conservative. The residential scenario is considered bounding of all other scenarios of concern including a recreational scenario and potential Native American issues (i.e., ingestion of native foods from the site).

Comment 11: Page 18 compares the alternative cleanup approaches for the ordnance areas. It appears that Alternative 3 would have a much higher cost than Alternative 2. Why would the costs for Alternative 3 be higher than those for Alternative 2? It is not clear why Alternative 3 would be more costly, based on the text.

Response to comment 11: Alternative 2 includes only institutional controls. No action will be taken to remove UXO contamination; actions will be taken only to limit access and restrict human activities at the sites. Under Alternative 3, geophysical surveys will be conducted throughout the Naval Proving Ground (gun range) and the two bombing ranges in order to define the extent of the UXO contamination and remove all detected UXO.

Comment 12: Page 22 states that the explosive materials at the TNT/RDX sites would be removed by hand. What measures would be taken to protect the workers involved in this excavation? How could it be that no personal protective equipment would be needed?

Response to comment 12: The phrase "removed by hand" only means typical excavation machinery would not be used to remove the soil, but that it could be removed with hand held excavation tools such as shovels. Personal protective equipment would be required for this type of excavation work and protective measures will be taken to protect the workers. This form of excavation (removal by hand) would reduce the environmental impacts.

Comment 13: Page 25 compares alternatives for the TNT/RDX Contamination Areas. Why is Alternate 3a, on-site soil disposal, preferred over Alternate 3b, off-site soil disposal? If the costs of the two alternatives are basically the same (given the error factors associated with cost estimates), it makes no sense to prefer on-site to off-site disposal over a sole source aquifer.

Response to comment 13: The cost estimate is based on an assumption that only 800 yd^3 of soils require removal from the sites. It is possible the amount of soil to be removed may greatly exceed this estimate, in which case the cost difference between on- and off-Site disposal will be much greater. Use of a facility on the INEEL is also consistent with DOE preference for use of on-Site disposal facilities where available. Results of soil sampling and analysis also indicates the average concentration of TNT and RDX in soils to be removed and disposed of will be about 400 ppm to 600 ppm, which is significantly lower than the 100,000 ppm limit for disposal as nonhazardous waste. TNT and RDX at these concentrations are readily biodegradable in an anaerobic environment, such as exists in the CFA Landfill; hence, they are not expected to permanently remain in the landfill soil after disposal.

Comment 14: Page 34; Table 9 lists sites requiring institutional controls and 5-year reviews. What is the predicted timeframe when the risks associated with these sites would diminish sufficiently that institutional controls would no longer be needed?

Response to comment 14: Sites listed in Table 9 will be reviewed during each 5-year review to evaluate the need to continue institutional controls. Many of these sites containing buried radioactive waste such as BORAX –02 may require institutional controls far into the future. The responsibility of DOE for these types of areas is currently being discussed under their long-term stewardship plans and will be addressed at the INEEL by a site-wide institutional plan to be developed under OU 10-04.

Comment 15: Why is it felt that excavation is needed in the gun range? Why would the entire berm need to be removed, as the debris is likely only in half of the berm?

Response to comment 15: Excavation is needed to remove the lead fragments and lead contaminated soil from all areas impacted by the firing activities, which includes the berms, surrounding soil, and pond.

The entire berms will be processed for removal of lead and contaminated soil since the back half of the berms also contain lead contamination. In addition, machinery to be used will be capable of moving and processing very large volumes of material; the configuration of the berms makes it impractical to only remove the front face and top half without spreading contamination to other portions of the remaining soil such precision is not possible with the machinery that will be used.

The size of this gun range is also small compared to gun ranges at Department of Defense facilities and gun ranges used by the police departments of large cities such as New York, Chicago, and Las Angeles. The selected remedy for SFT-02 is the same as used to periodically cleanup gun ranges at these other facilities where much larger volumes of soil are removed, processed, and replaced or disposed of.

Comment 16: The Proposed Plan for Operable Unit 10-04 indicates that the preferred alternative for the Gun Range (STF-02) is Alternative 3a: "Removal, Treatment, and Disposal" in reasons set forth

below, Edenspace Systems Corporation believes that new technologies may substantially reduce the cost of Alternative 3b: "Removal, Treatment and Return" In addressing cleanup requirements at the Gun Range. Accordingly, Edenspace respectfully requests that evaluation of these new technologies be conducted before final selection and implementation of a cleanup alternative for the Gun Range.

Edenspace is a commercial leader in the use of living plants to remove heavy metals from soil and water, a process called phytoremediation. After the plans take up and concentrate metals in their leaves and stems, they are harvested and removed for disposal.

The enclosed list of field activities illustrates the range and depth of Edenspace's experience with this technology. The company has achieved average lead uptake in the field at rates approaching 4,000 mg/kg, and bioconcentration ratios (the ratio of plant lead concentration to soil lead concentration) higher than 10. We believe that under optimum growing conditions up to 100 mg/kg of soil lead per year can be removed using this *in situ* technique.

By concentrating lead in the plants at levels higher than in the soil, the technique offers two possibilities for reducing costs. First, the technique reduces the total mass of material that must be disposed of in a landfill. The mass of plants, in other words, is less than the mass of contaminated soil. In addition, the lead recovered from the plants can be recycled. Since the Proposed Plan indicates that metal recycling facilities are available, this option may prove an attractive means of reducing the amount of lead that remains on the site in the CFA landfill after treatment is completed.

The contemplated advantages of the technique at the Gun Range include lower cost, lower or zero volume of material sent to the CFA landfill, lower or zero amounts of lead sent to the CFA landfill, no use of hazardous materials, and preservation of topsoil.

Edenspace has conducted demonstrations on firing ranges in the past, and has integrated its techniques with physical sorting to remove metal fragments including bullets and casings. It is recommended that the sorting take place first, to reduce the volume of soil that must be phytoremediated.

Edenspace is currently conducting research with New Mexico State University on arid country phytoremediation of depleted uranium. Many of the techniques being demonstrated — using native plants and drip irrigation, for example — should be applicable to the Gun range.

We would be pleased to meet with you, or with other stakeholders in the proposed cleanup, to answer questions about our techniques. I've enclosed a copy of the company statement of qualifications. Additional information on Edenspace may be found at our web site, www.edenspace.com.

Response to comment 16: The application of phytoremediation for OU 10-04 sites was evaluated in the feasibility study and determined to be not applicable. The lead contamination at the STF-02 Gun Range is primarily in particulate form (i.e., bullet fragments from firing range use), which is not available for uptake by plants. Ionic forms of lead, which are available for plant uptake, are usually deposited when metal-bearing propellants, ammunitions, and powders are burned at explosive disposal sites or when metal-bearing particulate in the soil are dissolved and converted into the ionic forms. Since propellants and powders were not burned at the STF-02 Gun Range, the only source of ionic lead would be from dissolution of the particulate lead. In alkaline soils at the INEEL, the dissolution process will be very slow, and the extent of ionic lead concentrations is likely to be very low compared to the concentration of particulate lead. Therefore, treatment to remove particulate lead was selected for the preferred alternative.

Comment 17: In looking through the proposed plan, I saw the list of sites "not requiring cleanup." The telecommunications Cable stood out both because it had no site code and because I was involved

years ago with laying cable in Mississippi. Because I am familiar with cables I knew that some are possibly oil filled and that the oil in some of the older cables contains PCBs. I got onto the public area of the INEEL web site and looked up the information about the "Telecommunication Cable." According to the report I read, this cable is just the type of cable that might have PCBs in the "asphalt-like" substance that was described in the report. The report I looked at, a Track 1 Guidance Report, however, made no mention of PCBs, but only lead, which was sampled (although what was actually sampled for lead was unclear). I wonder why you consider the lead at the STF Gun Range a problem, but not the lead in 30 miles of cable. In addition, I cannot help but think that the omission of PCBs has been an oversight.

I have printed this letter on the back of an article I printed from http://www.tci-pcb.com/article.htm. Please correct this oversight.

I agree with the plan otherwise.

Response to comment 17: The "telecommunication cable" was installed by U.S. West Communications in the early 1950s. This cable measures 36.5 miles in length and is buried approximately 3 to 4 feet below the ground surface. The cable was cut and rendered useless in the spring of 1990. In 1994, a Track 1 was conducted to determine whether the telecommunication cable was a hazardous waste and needed to be removed or a non-hazardous waste and could be left in place. Several soil samples were taken around and beneath the buried cable. The results of these samples indicated that detectable lead concentrations were comparable to background levels. These results revealed that the lead contained within the cable was not migrating to or contaminating the surrounding soil. This is unlike the STF-02 Gun Range where lead concentrations were significantly over the levels of concern, and lead is on the surface and located in a small area. Therefore for lead contamination the STF-02 Gun Range is considered a concern.

Of greater concern is the lack of sampling for PCBs. The article that you cited indicates that paper-insulated lead-covered (PILC) cable—widely used in urban underground network systems—is constructed of copper conductors wrapped with paper, impregnated with dielectric fluid. The cable is jacketed with a lead covering to keep out moisture, and may also have a plastic or rubber outer jacket. It also states that the PCBs may have migrated from PCB-filled transformers. Other causes include improper maintenance, use of PCB-contaminated equipment in handling the oil, or even use of PCB oil in the manufacture of the cable. This article goes on to state that in most instances, PCB concentrations are not evenly distributed along a length of cable. Unlike transformer dielectric fluid, where PCB concentrations are evenly distributed within the closed confines of the tank, PCB concentrations are seldom homogeneous throughout a section of cable. To determine conclusively if a section of PILC cable is contaminated, it must be tested in 30- to 50-ft increments. In some cases, significant levels of PCBs have been found evenly distributed along the cable. If this is the case, it can generally be assumed that the cable was contaminated at the manufacturing stage.

The PILC cable lead jacket that keeps out moisture will also keep any oil that is present in the cable paper from leaching out. Because the cable is buried 3 to 4 feet below the ground surface, the depth of the cable limits the accessibility for exposure. Also, because the location of the cable is known, disturbance of the area would be limited. Currently, the site does not present an unacceptable risk, and the anticipated costs required to remediate or remove the cable would outweigh the environmental benefits to the site.

Comment 18: [a] It is evident that DOE desires to limit cleanup of its radioactive contamination at the WAG 6 and 10 Site properties as much as possible. According to the 10-04 RIFS, radioactive soil contamination remains at the EBR-I tourist park. DOE, however, has "shopped for a risk number" in writing this site off that is really accessible to the public. DOE obviously hope the community will accept a very limited cleanup of the radioactively contaminated properties in WAG 6 and 10 based on their

existing limited use. This doesn't hold true at EBR-I, where the public can walk around and get contaminated. It should be cleaned up for unrestricted use and not written off with risk assessment voodoo numbers.

[b] Other sites that DOE doesn't want to clean up include the Borax area sites. The Leach Pond, the Buried Borax I reactor, the soil contamination around Borax, the buried reactors at the Borax 2 and 5 reactors. These should all be cleaned up for unrestricted use and not left for long term control.

[c] The OMRE reactor area is still contaminated with radioactive compounds. DOE used dozens of pages of rationalization to write this one off. Previous document in the WAG 10 area say contamination in the ORME Leach Pond was left in place by D&D at levels up to 1,000 pCi/g, yet the DOE risk assessment did not use those levels in it's calculations. It is probably on it's way to the aquifer. The high levels found in the soil more recently (up to 240 pCi/g ON THE SURFACE!), the DOE took dozens of pages in the RIFS to write off as "outliers" I guess. Why leave another obviously radioactive site out there that will need years of monitoring and control, when it could be dug up and put in the new contaminated soil dump?

With the indefinite duration of the radioactive hazard (what, 500 years for the 1,000 pCi/g?), the expectation of danger to continued workers in the area and hopes to re-use the properties, and the availability of much better physical sties (ICDF) where the long-term isolation of the radioactive wastes is both better assured and more cost-effective, I believe the goal of cleanup for unrestricted use makes sense and is essential if we are to adequately protect many future generations of site users (future residents even?) from elevated rates of radiation-induced death and injury.

Response to comment 18: [a] A non-time-critical removal action was conducted in 1995 to remove radionuclide-contaminated soil from a fenced area at EBR-I to which the public did not and does not have access. The total volume of soil removed was approximately 1,280 yd^3. However, in one location on a basalt outcrop, the backhoe was not able to remove all the residual radionuclide-contaminated soil from basalt cracks and around an adjacent concrete fence-post foundation. A hand-crew made several reasonable efforts to remove the soil, but a small volume (<1 yd^3) of residual radionuclide-contaminated soil still remains around the fence-post foundation and in the basalt cracks. This small area, posted as a soil contamination area, is secured from public access. It is surveyed every six months by radiological control technicians to ensure that conditions are not changing. This site was assessed in the OU 10-04 RI/FS using standard risk assessment methodologies, and neither the large area where contamination was removed nor the small area where residual contamination remains was found to present a risk to human or ecological receptors.

[b] All the BORAX sites have gone through some type of action to address risk to human health. The record of decision for Operable Unit 5-05 and 6-01 addressed the BORAX-02, BORAX-I Burial Ground. The remedial action prescribed by the record of decision consisted of consolidating the contaminated soil over the former reactor site and capping the soil with an engineered barrier. The remedy was implemented in 1996. Although the remedy reduced the risk values to below acceptable levels, this site will require institutional controls to enforce land use restrictions and prohibit intrusion into the cap.

D&D activities occurred at BORAX-01, BORAX II through V Leach Pond, in 1984 and again in 1991 through 1992. In 1984, the leach pond was backfilled with approximately 305 m^3 of clean soil, graded, and reseeded to inhibit erosion. The associated piping was not addressed in 1984, but was left in place until 1992, when it was removed. Other than a small volume of contaminated soil removed from under rusted pipe sections in 1992, no other contaminated soil was excavated from the leach pond area as part of the D&D operations. This site was evaluated in the OU 10-04 RI/FS and the human health risk values fell within the 1E-04 to 1E-6 risk range. Therefore, no further remediation is required at this site.

A non-time-critical removal action (NTCRA) was conducted at the BORAX-08, BORAX V Ditch, in 1995. During this removal action approximately 900 m^3 of radionuclide contaminated soil was removed from this site. Following the NTCRA, verification sampling indicated that the preliminary remediation goals had been met. This site was evaluated in the OU 10-04 RI/FS and the human health risk values fell within the 1E-04 to 1E-06 risk range. Therefore, no further remediation is required at this site.

A D&D removal and containment action was conducted at BORAX-09, BORAX II through V Reactor Building, in 1996 through 1997. The objective of these activities was to reduce the predicted radiation exposure risk to future workers and residents to well below the National Contingency Plan (NCP) target risk range. This was accomplished by removing all remaining aboveground structures and systems and entombing the subfloor levels of the reactor building. No radiological health and safety hazard to the public or INEEL workers remain on the surface of the facility. Although the remedy reduced the risk values to below acceptable levels this site will require institutional controls to enforce land use restrictions and prohibit intrusion into the entombed facility.

These four BORAX sites no longer pose a threat to human health and further remedial efforts would cost more than the environmental benefit.

[c] A portion of the OMRE Leach Pond was remediated in 1979 to remove radionuclide-contaminated soil. The chief contaminant was Cs-137 and the cleanup goal was 1,000 pCi/g. Contaminated soil up to this limit may have been left in place; however, no verification data were identified. The pond was backfilled in 1980 and the entire area was revegetated with grass (section 12 of the OU 10-04 RI/FS). The Cs-137 contamination left in place in 1979 is now 3 to 8 feet below ground.

Extensive sampling was conducted at this site in 1997. Sampling included a passive soil-gas survey to detect semi-volatile organic compounds (SVOCs) and volatile organic compounds (VOCs) in the subsurface, and collection of soil samples for radionuclide and metals analyses from several depth increments in nine boreholes that were hand augered down to the basalt bedrock. In addition, hand-held radiation detection and global positioning system (GPS) instruments, were used to locate and record the coordinates of the radioactive hotspots in the surface soil. The Environmental Monitoring Program, which had conducted annual radiation surveys of OMRE for several years prior to 1997, indicated that all the surficial radiological hotspots had been previously identified and none had generally exceeded 1 mrem/hr. In 1999, additional sampling beneath the former pond was completed in the basalt bedrock, in 2 sedimentary interbeds, and in the aquifer. The aquifer sampling was continued quarterly for 2 years. None of the samples collected below the soil/basalt interface, including groundwater samples, contained Cs-137 at any concentration.

In short, the 1,000 pCi/g concentration was not used in the risk assessment because the recently collected data show that no concentrations approach that level. Direct radiation measurements over the soil cap show only background readings. The highest concentration observed in the former pond soil was approximately 156 pCi/g at the 3- to 6-ft depth. The half-life of Cs-137 is approximately 30 years. If 1,000 pCi/g had been left in the subsurface in 1979, the concentration today (after 23 years) would be approximately 590 pCi/g. During the time (100 years) this site remains under institutional control, the 590 pCi/g of Cs-137, if it exists, would decay to approximately 60 pCi/g. The 156 pCi/g that was actually measured in the subsurface will decay to approximately 16 pCi/g.

The human health risk assessment was conducted using all available data. However, prior to the risk calculations, it was important to identify "hotspots" for some of the exposure pathways because an area weight average is used to estimate the extent of contamination. These areas or "hotspots" would skew the exposure point concentrations (far too conservatively) and present unrealistic risk levels. Therefore, these "hotspots" were evaluated separately in the risk assessment and were not written off as "outliers."

The maximum detected concentration of Cs-137 was 240 pCi/g in a localized hotspot in the surface soil, and the concentration reduced to 2.18 pCi/g six feet below ground. The hotspots with the highest concentrations were evaluated for external exposure using RESRAD 6.0 under two scenarios: current worker and future resident (in 100 years). The results of this assessment indicated that risk levels were not high enough to warrant cleanup. In 100 years, the 240 pCi/g will decay to approximately 24 pCi/g.

The results of the human health risk assessment had risk values in the 1E-04 to 1E-6 risk range. Therefore, because this site does not pose an immediate health threat it will be mitigated under institutional controls.

Comment 19: [a] Thank you for inviting comments on the OU 10-04 proposed plan (Jan 2002).

The INEEL seems to have forgotten most of what the CAB said when the incomprehensible WAG 1 proposed plan (first version) was reviewed. The present document has reverted to type in its excess length, redundancies, punctuation and grammatical errors, inconsistencies, undefined terms, jargon, and general unwillingness to tell plain truth in plain English.

[b] A sampling of such: "the INEEL sights new construction within the areas" (p. 17), "here after referred to" (2), general signs of hasty or unskilled writing throughout. Examples: both "UXO" and "unexploded ordnance" used, as though no one could agree; MDA vs. Mass Detonation Area, similarly. "See Figure 2 on page 15," is on page 15; and "see Figure 2 on page 15" on page 2, although it has Figure 1 right there, that shows the information forwardly referenced — in violation of all clear writing rules. Sagebrush Steppe Ecosystem Reserve is described on page 32, but not mapped on the facing figure — mapped instead on pp. 15 and 2, but no reference to those Figures on page 32. Pp. 7, 9, and 16 give three largely redundant, yet still inconsistent, versions of animal risk from UXO. The Implementability of Alternative 3 for the Ordnance Areas is called "high" in the alternative evaluation, but then called "moderate," and "lower" than that of Alt. 2 later on the same page. Which is it? Why is inconsistent information being presented as justification for spending 16 million plus? Could the INEEL have spent some of that outrageous amount writing a document that works for the public, instead of against it?

Did the project engineers refuse to involve experienced, professional writers and editors in this document, or not give them time, or what?

[c] Does the INEEL have among its many "mission statements" one that reminds its employees that the public — not the INEEL — is the arbiter of intelligibility? If so, please quote it for the record. If not, why not? Just because someone thinks "site forwarding," "commonalities," and "fuze," are clever, or because a cubicled bureaucrat is cozy with "waste stream treatment," "geophysical surveys," "sagebrush steppe ecosystem," "sociocultural preservation" (is that a museum?) and "dermal contact" (what's wrong with "skin"?) does not mean the other 99% of the English-speaking (and tax-paying) country is not entitled to a document that uses normal words where possible, and defines those that are not. The Ordnance Area section, in particular, was contributed by an individual with no interest in communication: "airborne magnetic, multispectral, pre-dawn thermal infrared, firing fan," etc. are undefined -- so tell me, are these twenty-dollar words included as a put-down to the reader (whose degree may be in medicine or law, and who may be plenty smart enough to know verbiage when he sees it)? Or are they intended to persuade the reader that an agency that knows big words is qualified to spend big sums of public money? Please place definitions of these terms, and illustrations as necessary, in the Response to Public Comments to comply with the legal requirement for clarity.

Response to comment 19: [a] The CAB reviewed a draft Operable Unit 10-04 proposed plan and their comments were incorporated into the final version that was distributed to the public for review and comment. At their March meeting, the CAB drafted a recommendation on the OU 10-04 proposed plan, recognizing the document as easy to read and user-friendly.

[b] All Environmental Restoration Program documents are reviewed by technical writer/editors for format, content, and punctuation. It is the goal of the project managers who prepare the documents and the writer/editors who ultimately review the documents to make all ER materials clear and concise. We will correct all errors brought to our attention.

[c] Although it is sometimes necessary to introduce readers to new and sometimes technical terms that are commonly used at CERCLA cleanup sites, greater attention will be given defining technical terms in the future.

Comment 20: Graphics: Figure 1 on page 2 has text less than 2 mm high. This is unacceptable to AP and any mass-market publisher. Maybe an INEEL technology transfer could be magnifying glasses for these plans, with built-in dictionaries. But seriously, do the Agencies hope that unhelpful formats like this map will dissuade people from the effort of finding out what the INEEL is up to? Does the Agencies realize that this tends to exclude readers over 50 from review of these public documents in a way that seems discriminatory?

In a previous series of relatively well-designed proposed plans, the "Preferred Alternative" was labeled in the text. This plan forces readers to flip back and forth to discover the rest of the story. Stupid oversight, or more design-by-engineering-team? Please, make a commitment to continue communication methods that the public has demonstrated its clear preference for.

We have more confusion than usual between sites (nine to remediate) vs. areas (three of the sites are areas-- see p. 6); fuzes (military jargon) vs. fuses (normal English), and so forth and so on: when will INEEL realize that the public is not interested in engineering argot, INEEL-insider dialect, or the generally self-important and arrogant attitude that INEEL -- a tax-supported enterprise -- communicates by allowing jargon and vague language to run amok? These documents are supposed to serve the public, not offend it. The Agencies owe the public a frank apology for spending public money on an inadequately reviewed document.

Response to comment 20: In the future, text this small will not be used in figures and greater effort will be directed toward improving quality of public documents.

The commenter is correct in stating the term "Preferred Alternative" was used in the text of previous proposed plans to clearly highlight the agencies' preferred choice of alternatives. Not highlighting the preferred alternative in the text of the OU 10-04 proposed plan was an oversight.

Comment 21: Ordnance Areas. **[a]** In several places (ex. pp. 7, 16), it is stated that the risk from the UXO areas is from physical danger. Yet, the No Action Alternative is rejected in part because "contaminated soil would remain." Is this statement a careless mistake, or is there some kind of contamination that would remain, and if so, what sort and how much?

[b] If widespread ground surface survey for UXO is carried out, what provisions will be made for environmental protection, including avoidance of noise stress to fauna? Will areas of significance to Native Americans be protected from further demolition, drive-overs, and other damage, or will only "arrowheads" count in the Anglo definition of elements to be protected?

[c] DoD has an excellent, long-existing, and widely tested knowledge of UXO remediation. Why is it not used? Is the DOE averse to proven technologies? Wouldn't it be more cost-efficient to do that, rather than vaguely promising "research" to find out what's available?

[d] Will the "revegetation" of any of these sites involve crested wheatgrass, a non-native, invasive species?

[e] The preferred alternative for the Ordnance Areas is three to eight times the cost of the others, but offers little more other than vague promises. Alt 3 admits that UXO will remain, because the technologies available do not provide assured complete detection, and this document identifies no new technology that will. Does "verification" (p.18) mean some kind of treatability studies will be done? If so, why is that not stated, and the costs specified? How can a Total Cost be presented for an unknown amount of "research" into "evolving" technologies, followed by "selected areas" testing? What, exactly, does this 16.5 million include? What will be the cost for the "additional" surveys and removals that are clearly anticipated (p.19)? What does it mean (p. 18)... ordnance will be cleared "as appropriate"? Please describe the circumstances under which ordnance removal would be "inappropriate," and indicate what proportion of the time that will occur.

We are not in favor of Alternative 3 for the Ordnance Areas. It promises the highest cost, and one that remains open-ended and unjustified, for what is admitted to likely be incomplete removal, unless an as-yet undeveloped (and in this plan, undefined) technology suddenly breaks over the horizon. It promises to spend an indefinite amount of time and money on "research," before initiating action. It doesn't even hint at what the non-detection rate might be, making this look (especially given previous removals) like a blank check for future work, or perhaps just future futility, if large areas can't really be "cleared." Finally, it fails to discuss currently existing DoD UXO knowledge, an omission so extraordinary as to suggest that the INEEL team did not do the basic research that should have preceded release of this proposed plan. (As well, is the INEEL aware that several effective DoD UXO removal programs are staffed by, Native Americans? If not, why not?) The Agencies cannot even agree on whether the implementability of Alternative 3 is "high," "moderate," or "lower than Alt. 2" (all on p. 19). Shouldn't these agree?

Suggestion: The Agencies should withdraw this incomplete effort for the UXO areas and reissue it when they have a reliable technology available, can agree on its ranking, and have its costs figured out. Right now, the Agencies are asking the public to "comment" on a plan that is fuzzy to the point of fantasy, and issue 16 M for "research." Would this become similar to the Pit 9 "research" and "verification" of technology? Nowhere in this plan is there any assurance it wouldn't. The Agencies should consult the Army and agencies elsewhere in the world — this is probably a standard problem — and present more specific alternatives with accurate and justified costs. Meanwhile, go with Alt. 2 as an interim solution — it's worked for 50 years (less an herbivore or two?) and that's better than most of DOE solutions.

Response to comment 21: [a] The "contaminated soil" was in reference to UXO being left at the site. The statement was misleading and should have been worded better. The risk from UXO within the UXO areas is from physical danger only.

[b] Currently, the use of airborne methods to detect and map UXO is considered preferable, as this is the only method presently available that can survey such a large area in a reasonable amount of time and still preserve all natural vegetation and habitat. Surveys would not be conducted over sensitive environmental areas during critical periods, such as nesting season.

[c] A comprehensive evaluation of UXO detection methods developed and utilized by the Department of Defense was presented in the OU 10-04 feasibility study. The intent is to use proven technologies for the detection and mapping of UXO. Efforts will continue to evaluate new technologies as they are developed for application at the INEEL. Actual research to be conducted at the INEEL to develop new technologies for UXO detection and mapping is not proposed or planned.

[d] Crested wheatgrass is no longer used to revegetate sites following remedial actions at the INEEL.

[e] While it is the intent of the selected alternative to perform surveys to fully define the extent, density, nature, and accessibility of the UXO at the INEEL, the surveys will be postponed until more accurate and cost effective technology is available. Any technology considered for use in performing such a wide-scale survey will be tested under site specific conditions to verify UXO detection, accuracy, and reliability. The cost for performing such testing was considered in the development of the alternatives and presented in the feasibility study. Until the full extent of UXO contamination at the INEEL is known, the risks posed by the UXO are understood, and the technical issues for identifying and removing all UXO are assessed, it is not possible to predict with accuracy the cost or success of the removal of the UXO hazard. Therefore, remediation for UXO will be performed in a phased approach to address areas determined to pose the greatest risk first. Activities to be performed in implementing the selected remedy will include the following:

- Perform a geophysical survey over the gun range and bombing ranges
- Use the survey results to identify and define the boundaries of UXO contaminated areas
- Intrusively investigate selected UXO targets identified during the survey to determine the ordnance density, explosive characteristics of the UXO, and ordnance accessibility
- Use results of the survey and intrusive investigations to determine the relative risks of land use and ascertain the extent of UXO removal required to meet land use objectives
- Remove UXO and/or dispose by detonation
- Establish institutional controls consistent with land use objectives after UXO removal where necessary.

The OU 10-04 Feasibility Study describes this alternative in detail. This approach to remediation of the UXO sites is based on the evaluation and remediation of the UXO areas at Adak Island, Alaska, which are being performed under CERCLA authority. The feasibility study also identifies, describes in detail, and evaluates the proven geophysical methods to detect the type of UXO present at the INEEL.

Due to the large area to be surveyed, an aerial method of UXO detection is considered preferable at this time. Aerial methods would also avoid impact to the vegetation. A recently proven helicopter-based UXO detection and mapping system is considered one of the most appropriate methods to survey the site. The cost estimate for the survey is based on use of this helicopter-based system at various Department of Defense sites. However, before any aerial UXO detection method would be considered for full-scale survey, a demonstration would be performed over a specifically designed test area and over a known high-impact area for ordnance testing to demonstrate effectiveness under site specific conditions; this is the verification mentioned in the proposed plan. The cost estimate also assumes several small-scale demonstrations of aerial UXO detection methods would be conducted before a commitment was made to use a technology to survey the entire UXO area.

The cost of performing a geophysical survey over such a large area is high. Based on current experience at Department of Defense sites, it would cost $8M to survey all the UXO areas at the INEEL using the helicopter-based UXO detection system, and it would take nearly three years to complete. However, it would be much more expensive and take significantly longer to perform UXO detection using ground based systems such as towed arrays of magnetometers or hand-held manual methods. Over

400 acres can be surveyed in one day using aerial methods, while less than 20 acres per day can be surveyed by a mechanical ground-based system, and only a few acres per day can be surveyed manually.

Research to develop remote detection and imaging technologies is not a part of the preferred alternative. Rather, efforts will be made to evaluate new UXO detection systems as they are developed and demonstrated.

Comment 22: TNT/RDX Sites. **[a]** Is "MDA" on p 23 the "Mass Detonation Area," also on p. 23? Why is it identified in Figure 6 as a "location of contamination," but not included in the OU 10-04 remediation? If the MDA will be cleaned up later, it must be contaminated now, yes or no? If it isn't contaminated now, does it become a CERCLA site when it gets used to clean them up? If the explosives at the TNT/RDX sites must be removed to MDA as part of cleanup, where will the explosives at MDA be removed to as part of its cleanup?

[b] Piling up unremediated soil in an INEEL dump (Alt. 3a) cannot possibly be as good a long-term solution as the complete destruction of all contamination through composting (4b), which results in the kind of environmental rehabilitation that should always be preferred. Future land use at the INEEL will eventually require remediation of this relocated problem. Why not solve it now, and for only one charge to the public? Doesn't CERCLA have a preference for permanent and on-site solutions? If so, 4b is the only logical choice. It would be better to try it, at least, because if for some reason it wasn't complete, the amount of contaminated material that would then require disposing would be much smaller.

As to "implementability," the DOD has reliably developed cost-effective composting methods for this purpose. Given that the potential organic amendments include manure and potato waste, both abundantly available here, why doesn't INEEL use this opportunity to work cooperatively with companies in this region to mutually solve two or three waste problems simultaneously?

I would like the Agencies to select Alt. 4b. It has higher rankings than their preferred, old-fashioned dumping alternative, its cost difference is certainly not one the INEEL has ever balked at, it would destroy the contamination instead of just relocating it to be a problem forever more, and it would be an innovative and community-minded approach.

Response to comment 22: [a] The MDA does not have soil contamination requiring remediation. It is within the UXO areas and may contain UXO. The MDA will be used for destruction of the TNT and RDX fragments and UXO. After remediation of the TNT/RDX soil sites and the UXO areas is considered complete, the MDA will be investigated to determine if unacceptable soil contamination resulted from these disposal activities. If the soil contamination exceeds risk based levels, remediation will be performed. Remediation would most likely involve removal, treatment, and disposal at an approved facility on or off the INEEL.

[b] Alternative 4b – composting, is a treatment method that is very cost-effective for very highly contaminated soils (>10,000 ppm TNT) when direct disposal is not an acceptable alternative. Very highly contaminated TNT/RDX soils are most often created as a result of the manufacture of TNT and RDX, not from periodic detonation experiments such as occurred at the INEEL. The soil to be removed during remediation of the TNT/RDX sites at the INEEL is expected to be within 400 to 600 ppm, which is well below direct disposal criteria of 100,000 ppm.

Comment 23: Gun Range. We find the Agencies' preferred alternative acceptable.

Response to comment 23: Comment noted.

Comment 24: Sitewide Ecological Risk

[a] The Sagebrush Steppe Reserve is described as significant for protecting some of the last bits of this important, threatened ecosystem. Yet the ecological risk assessment does not describe what risks threaten it. Nor does the sitewide ERA adequately evaluate the impact to T&E species, much less share even those data-challenged conclusions with the public in this document. Why?

[b] The ERA data are admitted to be scanty, but monitoring is all that is recommended. If there is no ecological risk, why is monitoring going to be carried out? The diagram on page 31 indicates that monitoring would be the response to a finding of no risk. Does this mean that the monitoring for this possible risk will be as perfunctory as if it was considered unnecessary? Or is "monitoring" is a code word for "finish collecting the data"? Why has adequate data not been acquired in the 10 years since the FFA/CO signing? Please state what kinds of data collection efforts are going to suddenly commence under the ROD for this action, that will differ from and move beyond the depauperate results of the last decade. What is this monitoring going to cost? When will it be done? What are the other alternatives, and where is the evaluation and ranking? What kinds of monitoring data will trigger more decisive action? What kind of monitoring data might cause it to be discontinued?

[c] About 50% of the Sagebrush-Steppe Reserve is within the Ordnance Areas to be searched (if Alt. 3 is selected) for UXO. How, specifically would this survey and removal avoid habitat destruction in this area and noise and other stressors to local fauna, particularly sage grouse. In fact, what is the INEEL doing with the SSR, besides noting (as though its some sort of achievement) that is going downhill less quickly than the rest of this devastated Basin ecosystem?

[d] The "human" health risk assessment operates under a conservative and precautionary principle. It appears that the eco-risk and Native American (non-"human"?) risk assessments proceed from the opposite direction: don't do anything until mass death occurs. A sort of "permissive" principle. What is the Agencies' actual theoretical basis for this distinction? Have the Agencies identified an ethical justification for this difference? Please provide references to such documents. (There can be no "scientific" basis for it, unless the Agencies have admitted that their science is not "value-neutral" and includes personal preferences.)

The ERA appears also unaware that plant, animal, and even soil and landscape resources are used very differently by Native Americans than by Anglos or their cows. The specific dangers that bioaccumulation or contamination of culturally significant areas pose to Native Americans have not been addressed AT ALL in either the human health RA or the ERA. Native Americans have been demonstrated to be differentially affected through their participation in the subsistence lifestyles that numerous treaties reserve. For instance, an EPA study released results in Feb 2002 confirming that Columbia River first peoples are 50 times more likely to get cancer than non-indian peoples, due to nearly 100 chemicals allowed to contaminate the riverine salmon that treaty rights are supposed to be protecting. In 1999, the CTUIR provided data to the DOE itself (the Hanford Reservation), showing that the "average white person" models used as the base map for "future/current worker" and "future resident" scenarios are grossly inadequate to protect the health of Native Americans.

Why is the INEEL so unaware of the kind, quantity, and content of relevant research on contamination and remediation relative to Native American rights and concerns?

[e] What was the value of the Shoshone-Bannock contract to assess Native American risk across this very large area? What was — in contrast — the amount expended by the INEEL on personnel time and analytical and statistical procedures to construct the white health risk scenario? Why were Native American subsistence activities not included in the (white) human health risk scenario?

Was a Native American liaison integrated into RI/FS work to help the INEEL's engineers understand a cultural universe they are unfamiliar with? Did the team include any trained social sciences professionals? Or does the INEEL believe that any "science" degree — say, in chemistry — confers qualifications for all research topics, even though the methodologies required in human sciences must account for far more complexity than laboratory tubes and trays ever can?

Another gap in the sitewide ERA probably stems, as suggested for the project team above, from disciplinary (if not actual ethnic) segregation: while T&E species are at least acknowledged as inadequately studied, plant and animal species important to the Shoshone-Bannock are not even mentioned. Traditional Great Basin peoples used several hundred species for tools, food, medicine, etc. The distribution of surviving populations of these species, and an assessment of specific risks to them from INEEL facilities, contamination, and intra-facility activities should be carried out. If it has been, where are the results and why aren't they included in this plan?

Suggestion: Withdraw this portion of the Plan until an adequately funded, comprehensive study of Native American exposure pathways can be carried out. Ensure that the study takes account of current knowledge and methods. Fully acknowledge its results through incorporation into INEEL exposure models, rather than relegating it to the unread and unused appendices.

Response to comment 24: [a] The primary overall risk to the sagebrush steppe ecosystem is habitat fragmentation and loss to agriculture and overgrazing. These types of physical pressures are generally not the focus of a CERCLA based risk assessment, and since the INEEL has limited grazing and is relatively undisturbed it is considered an ecological reserve. The risk from contaminants may be of greater concern if the INEEL truly becomes one of the few areas representative of the sagebrush steppe ecosystem. The evaluation of risk from contamination is presented in considerable detail in Section 17 and Appendices H1-12 of the OU 10-04 Comprehensive RI/FS (DOE-ID2001) as well as in the OU 10-04 Work Plan (DOE-ID 1999) and the Guidance Manual (VanHorn, Hampton and Morris 1995).

The second part of this question concerns the evaluation of sensitive species. This was previously discussed in the response to comment 6c.

[b] See the response to comment 7 for a discussion of the flow chart presented on page 31 of the Proposed Plan.

An ecological risk assessment usually requires consideration of many more factors than does a human health risk assessment. More than 200 species of plants and animals are possibly found on the INEEL, either part or all of the year. These species interact in numerous and complex ways, such as predation, plant eating, and scavenging, which must be taken into account. As well, the ecological risk assessment must take into account wide variations in ranges including migration patterns, and must also account for the tendency for many contaminants to accumulate as they move up the food chain. Finally, since many plant and animal species on the INEEL have not been extensively studied in terms of their habitat requirements, life cycle, or tolerance to the range of contaminants released, the ERA is subject to a number of areas of uncertainty. These uncertainties were identified by the Agencies in 1997 through 1999 as part of the INEEL-wide ERA planning process. Uncertainty issues relevant to the INEEL-wide ERA are presented in Section 17 and Appendices F and H1-H12 of the OU 10-04 Comprehensive RI/FS (DOE-ID 2001). Based on the multiple uncertainties and assumptions, and the use of community (population) endpoints in the assessment, it was determined that ecological monitoring would be critical to ensure protection of this important ecosystem. If as is expected, species on the site (such as the sage grouse - *Centrocercus urophasianus*) become federally listed, then the assumptions in the risk assessment will have to be re-evaluated. The proposed monitoring will be directed at addressing some of the data gaps that will be more critical at that time.

Significant data has been collected at the site since the 1970s; however, the focus was not on ecological risk but on evaluating the movement of contamination (primarily radionuclide) into the human health food web. Limited effects data has also been collected. As discussed in the OU 10-04 Comprehensive RI/FS (DOE-ID 2001), the two primary sources of long-term changes in populations (for birds and vegetation) on the site have limitations.

The long-term ecological monitoring will be initiated by the development of a comprehensive surveillance and monitoring plan. This plan will be designed to eliminate much of the uncertainty and assumptions in the risk assessment, to coordinate with ongoing air, soil, surface water, groundwater, and vadose zone surveillance and monitoring efforts, and other agency activities (such as sage grouse studies), and to address stakeholder concerns. This plan will provide the cost and schedule for activities associated with the long-term monitoring. An annual status report will be provided to the agencies. These annual reports will support the 5-year review. Specific decision points will be established that support continuation, modification, or the elimination of the monitoring at set times during the process.

[c] Secretary Richardson signed the agreement in July 1999 with the Bureau of Land Management (BLM), the U.S. Fish and Wildlife Service, and the Idaho Fish and Game Department to establish the INEEL Sagebrush Steppe Ecosystem Reserve. The agreement charters the BLM to develop a management plan that will continue to protect this unique habitat. The plan will recognize existing grazing activities on part of the reserve. The Energy Department will continue to control custody of the property and be responsible for access controls. The agreement is consistent with DOE's long-term land use plan for the INEEL, which envisions this area in the north central portion of the 890-square mile site as a buffer zone for laboratory activities. The land use plan does not envision expansion of INEEL programs in the area designated for the preserve.

Any activities associated with the UXO surveys in this area will be evaluated for possible stress to this environment. This and the BLM's management plan for the area will be used in the decision process at the time that a survey technique is selected.

[d] It is assumed that the Human Health and Ecological Risk analyses in combination do give some approximation of the potential risk to tribal members. Though admittedly not ideal, this approach is commensurate with the Shoshone-Bannock Tribal Risk Assessment Committee's desire to avoid all quantitative analyses specific to tribal people at this time. This in no way suggests that Native American people are "non-human."

The Shoshone-Bannock Tribes have been instrumental in helping the DOE to understand that tribal people value and use many types of resources on the INEEL in unique ways. DOE is also well aware of the kind, quantity, and content of similar research on contamination and remediation relative to other tribal people, including the analyses that have been completed at the Hanford site. In fact, the Hanford model was initially presented to the Shoshone-Bannock Tribes as an example of the kind of analysis that DOE wished to complete for the WAG-10 OU 10-04 RI/FS. However, the Tribal Risk Assessment Committee made it very clear from the beginning that they were not interested in completing a quantitative analysis of that type at the time. Instead, the Tribes expressed a preference for a qualitative analysis to be presented in its entirety in an appendix within the RI/FS and incorporated to some extent into the main RI/FS, as appropriate. At that time the Tribes also expressed an interest in completing all analyses associated with the project on their own with only minimal support from DOE. DOE complied with these requests.

[e] The Tribes were awarded a $50k contract to complete a unique tribal perspective for the WAG 10 RI/FS. The Tribal Risk Assessment Committee specifically requested that no quantitative analyses be conducted for tribal subsistence activities.

In addition to the direct support to the Tribes above, DOE also supported a multidisciplinary team to facilitate communication and coordination with the Tribes. The Team included an INEEL tribal liaison and Shoshone-Bannock Tribal member, a social scientist with previous experience in working cooperatively with the Shoshone-Bannock Tribes, an accomplished risk assessor with extensive knowledge of the INEEL, and an individual with extensive knowledge of contamination within WAG 10. The DOE tribal liaison, an individual who is tasked specifically with promoting tribal interests and sensitizing DOE personnel to tribal concerns and values, was also involved in the project. The goal of this team was to provide general support to the Shoshone-Bannock Risk Assessment Committee, coordinating tours and meetings, facilitating information transfers, and incorporating the tribal analyses into the RI/FS.

The DOE made a specific commitment to the Shoshone-Bannock Tribes to include the qualitative tribal analysis prepared by the tribal Risk Assessment Committee in the WAG 10 RI/FS.

Comment 25: Native American Issues

[a] Cultural resources legislation is part of ARARs, a threshold criterion that must be met. Cultural resources include significant landscapes, as well as "sites," which is a category defined by Anglos on the basis of technological remains. The Shoshone-Bannock report clearly identified the holistic health of their traditional "landscape" as a main concern.

INEEL has an Agreement-in-Principle with the Shoshone-Bannock that asserts the DOE intends to respect the Shoshone-Bannock's treaty rights to use of the area.

[b] The Shoshone-Bannock stated that the wholescale [*sic*] alteration of their traditional landscape by INEEL constitutes a cultural and societal threat. Yet, this proposed plan proposes nothing specific to remediate this longstanding and continuing impact. "The cultural concerns" of the Shoshone-Bannock, page 11 says, "were factored into" the RI/FS.

Examination of that document shows that their concerns were relegated to an appendix, its existence was cursorily noted in each site summary, and the Shoshone-Bannock's rights were thus dismissed with no remedy proposed.

Despite many documents in which INEEL and DOE express interest in (finally) working with the Native Americans whose land they are using, the RI/FS proposes no alternatives to address these valid concerns. INEEL's commitment "in principle" remains little more than that. The proposed plan goes beyond the RI/FS to suggest that "some Native

American concerns" will be addressed. Which, specifically? And how and when will their remaining concerns be addressed?

"These remedial actions," page 11 states, "will be selected" in the R.O.D. This is too vague to meet legal requirements for a CERCLA proposed plan. No alternatives have been identified, described, or evaluated. Where is the FS for this section of the cleanup plan?

[c] What was the INEEL's intention in asking for the Shoshone-Bannock statement? Was there ever any plan, CERCLA-related or otherwise, as to how to incorporate what could surely be expected to be qualitative data? The use of complex, qualitative data in linear, quantitative frameworks is admittedly problematic. The EPA and DOE have published more than one set of guidelines for valuation of what "heritage, nonuse, incommensurable, amenity, bequest, noncommodity, existence, intrinsic, legacy, etc." values. The EPA's NRDA in the Coeur d'Alene area has included a very substantial analysis of the traditional values of landscape (not just archaeology sites, which are point-type data, but the entire

holistically conceived landscape). ("Landscape Traveled by Coyote and Crane," Rodney Frey, 2001, University of Washington). Not only does the Coeur d'Alene worldview presented bear strong similarities [*sic*] to the Shoshone-Bannock's approach, the EPA on that project believes its detailed analysis will contribute toward accurate and adequate restoration of the balance. Have the Agencies preparing this proposed plan, considered consulting the Coeur d'Alene project team for ideas on how to proceed toward a constructive and just answer to the Shoshone-Bannock concerns?

[d] Suggestion: Withdraw this portion of the action and complete the necessary research to define and select remedies for the extensive, culturally insensitive damage to significant landscapes, such as those cratered by artillery and bombs 50 years ago. Consult cross-culturally valid models previously developed for DOE and other agencies, such as that used by Grand Junction in the uranium tailings cleanup. Most importantly, ask the Shoshone-Bannock for their assistance in developing appropriate remedial approaches. It is possible that just as their traditional view of the world is different from the INEEL's, their traditional concept of healing this imbalance may be unlike anything the INEEL might suggest.

We strongly support the INEEL's efforts to both repair the environmental damages done over the past 60 years while moving forward with important research, and contributing significantly to eastern Idaho's community and economy. Our final question pertains to INEEL's and DOE's broadest, and perhaps most vital future mission: stewardship for future generations. DOE statements available on the internet indicate an awareness that this long-term planning will have to have local responsiveness, transparency, accountability, and high flexibility. The handling of several INEEL issues, particularly at this point the Shoshone-Bannock concerns, may be seen as a test of INEEL's ability and its commitment. How do the Agencies expect to frame the next 100 years of "monitoring" of 10-04 ecological receptors and culturally significant landscapes? How about the 1000 years after that? Do they plan to give the Shoshone-Bannock concerns the same serous attention now that may well be demanded in the future by other, more powerful, local "cultures," such as the grazing industry, recreationists, bird-watchers, hunters, etc.? What is the specific form of integration of short-term holding actions like "institutional controls" into LTS requirements like stakeholder participation and review?

Response to comment 25: [a] The commenter is correct, cultural resources legislation is part of ARARs, a threshold criterion that must be met. Ongoing interaction with the Shoshone-Bannock Tribes have helped DOE to understand that cultural resources include a wide variety of natural, traditional, historical, archaeological, and landscape features. The Agreement-in-Principle between DOE and the Tribes is designed to promote increased interaction, understanding, and cooperation on issues of mutual concern between the parties. The protection of cultural resources, as defined holistically by the Tribes, is of paramount importance in the Agreement and is incorporated to basic project review procedures at the INEEL. Direct communication and participation by tribal representatives are critical elements in the cultural resource compliance program at the INEEL. DOE also recognizes the existence of the Tribes' Treaty rights and through the Agreement-in-Principle, agrees to identify, assess, limit, and mitigate any impacts of INEEL activities on them.

[b] See response to comment #25 for details on Shoshone-Bannock Tribal wishes in regard to the format of the tribal input to the WAG 10 RI/FS. Above all, DOE understands that cooperation with the Tribes is contingent upon direct and meaningful communication with tribal people. Solutions imported from other tribal negotiations in other parts of the country will never be satisfactory.

DOE has been working directly with the Shoshone-Bannock Tribes and providing support for their participation since 1996 and under the Agreement-in-Principle is committed to future interaction. Through continued interaction, it is hoped that the Tribes will assist DOE in developing unique, tribally valid solutions to the qualitative concerns articulated by the tribal Risk Assessment Committee. Hence

DOE will pursue conservative remedial approaches developed within standard human health and ecological risk parameters to begin to address general tribal concerns about contamination and desires to return the land to a pre-INEEL state.

[c] DOE began the WAG 10 tribal risk assessment project with a genuine desire to obtain input on INEEL activities directly from the Shoshone-Bannock Tribes and remains committed to understanding their concerns. In the future, DOE and the Tribes may decide to seek advice from other tribes and working groups on the difficult task of incorporating complex qualitative data into standardized quantitative risk assessment frameworks at the INEEL. However, DOE will not impose these external analyses and approaches on the Shoshone-Bannock Tribes. Future work will be designed and implemented with direct Shoshone-Bannock Tribes involvement in all aspects.

[d] The DOE made a specific commitment to the Shoshone-Bannock Tribes to include the qualitative tribal analysis prepared by the tribal Risk Assessment Committee in the WAG 10 RI/FS.

DOE is committed to working directly with the Shoshone-Bannock Tribes to develop remedial approaches that address unique tribal concerns and will continue to support ongoing dialog about these important topics. For instance, support is being provided for direct tribal participation in the development and implementation of a plan for long term ecological monitoring and is also provided to the Tribes to engage in the ongoing development of tribally sensitive long-term stewardship approaches.

Comment 26: Letter with Proposed Plan Comments from the Shoshone-Bannock Tribes

March 26, 2002

Kathleen Hain
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DOE Idaho Operations Office, MS 3911
PO Box 1625
Idaho Falls, Idaho 83403-9987

RE: PROPOSED PLAN FOR OPERABLE UNIT 10-04—WAG 6 & 10

Ms. Hain,

The Shoshone Bannock Tribes' Tribal/DOE Agreement in Principle Program reviewed the Proposed Plan for Operable Unit 10-04 and is providing the following comments. The Tribes also appreciate and applaud the individuals who worked on the RI/FS and the Proposed Plan for 10-04 Summary.

The following comments are organized by general comments, Tribal/DOE AIP staff comments (air quality, environmental, and cultural resources) and each of the staff's sections provide comment to TNT/RDX, Ordnance, and Gun Range issues. Our general comments discuss treaty rights, transportation of contaminated materials, human health standards, CERCLA, and other issues regarding tribal interests.

General Comments:

The Shoshone-Bannock Tribes appreciates the opportunity to submit comments to this very important assessment. Several important issues affecting our tribes must be incorporated in any considering factors by DOE evaluators. These include affect to our Treaty Rights or abrogation of Congressional promises to our Tribes, long-term land management/stewardship by DOE or any other federal agency, land transfers and exchanges in subsequent decisions related to 10-04, specific description/definition of contamination clean-up standards, contamination affects on cultural resource/historic properties, application and compliance with federal law, and most importantly coordination efforts with our Tribes not only as a stake-holder but also as a sovereign government entity.

An important note that must be stated is that the DOE and Shoshone-Bannock Tribes' Agreement-In-Principle provides for more than cultural resource issues. The Proposed Plan for 10-04 continually suggests that our Agreement is coordination between DOE and the Tribes for cultural resources only. The Agencies need to fully understand the important point that our tribal interests are not specific to *cultural resources*, particularly as cultural resources is understood by a federal agency. Consideration of any decision should not be narrowly considered in respect to cultural resources as the only tribal interest. To fully understand this concept, the Agencies need coordination with the DOE American Indian Program Manager or the Shoshone-Bannock Tribes' AIP Program.

Transportation: The Tribes are concerned about transportation of contaminated materials, even on-site transportation. The potential for on-site accidents could affect pristine/non-contaminated areas that we consider our aboriginal territory. The summary document discusses the implications of contaminated material in situ, however there is a lack of discussion of transporting contaminated materials to various storage/repository locations.

Currently the Tribes are notified of transportation accidents involving contaminated wastes. The movement of contaminated materials on site is also a concern because the potential for accidents are a potential reality, similar to the transportation of materials off-site. It is recommended that our Tribes receive notification of transportation accidents similar to those notifications already in place.

Human Health Standards. Although the RI/FS summary document discusses sites that may not pose a potential hazard to humans, natural resources, and the environment, it's not clear what the contamination standards are that lead to this conclusion. Also what is not clear is if the evaluative considerations were concluding if future human health was determined based upon the levels/types of health conditions. Were the standards to evaluate the 100-year scenario based upon the possibility of a human being in perfect health versus a person experiencing less than perfect health conditions?

CERCLA (see pg. 13 in PPO Unit 10-04). The CERCLA process discussed the CERCLA criteria and evaluates costs for each alternative. The paragraph assumes capital costs generated for facility construction towards completing the remedial action. Understandably, clean up may involve construction of facilities, but as WAG 6 and 10 evaluates environmentally pristine areas outside of WAG facilities, it's not clear if facility construction should be the only capital cost consideration.

The uncertainties described in RI/FS document also needs cost investment to fully determine contamination levels and effects on ecological receptors. Environmental studies also need capital costs if DOE is serious about determining organic, metal, and radionuclide contamination on all aspects of DOE activity on the INEEL relative to the WAG 6 and 10 PO 10-04 Project. Focus on constructing facilities, operation and maintenance, labor/maintenance, and other associated type costs fails to address all components of remedial actions for all receptors mentioned in WAG 6 and 10 efforts.

Air Quality Comments:

TNT/RDX Contamination Sites

The Shoshone-Bannock Tribes (Tribes) are very concerned about chemical and waste residuals located at the TNT/RDX sites. It was reported in the *Site Description* that a number of previous remedial actions have taken place, especially over the past 10 years. However, none of these past efforts have resulted in an adequate clean-up of this area, and the Tribes are concerned that DOE will select another sub-standard plan, where upon completion, the contaminants remain at levels which constitute such a risk that Tribal members continue to have restrictions on their access to this area.

The Tribes recommend that the DOE re-evaluate the risks (and alternatives) based on actual air sampling. Chemicals remaining from TNT and ordnance residuals may have dispersed to the soil at these sites, which create health risks from wind-borne fugitive dust. Consequently the Tribes, recommend that DOE not rely solely on modeling to predict air quality risks, but actually carry-out particulate air sampling in the area of the TNT/RDX sites, with the collected particulate matter analyzed for constituents such as lead, TNT, and other ordnance chemical-residuals. Also, if an alternative is eventually selected, where unexploded ordnance is detonated, has the air quality impacts of this activity been evaluated in the risk analysis?

Is the reason for clean up based on the premise of future inhabitants—human habitation? The Tribes object to the fact that there have not been other alternatives proposed when the sites may be restored to the extent that there are no land-based institutional controls in place. Furthermore, there is a lack of alternatives mentioned that after the DOE's mission is complete tribal members may return to these lands and exercise our treaty rights. To continue to propose institutional controls associated with all the proposed alternative (in spite of several past clean-up projects) is like an admission by DOE that none of the proposed alternatives will succeed, and the area will remain an unacceptable risk to the public even after the clean up is completed. This begs the question what is the point of partial clean up. It is recommended that after the abovementioned air quality analysis is complete, DOE revise the choice of alternatives to include a project that cleans the area up to the point where "institutional controls" do not apply, including the lack of restrictions for tribal future access and use.

Gun Range

Although the description indicates one of the principle risks at this location is from lead becoming air-borne there has not been any air quality data provided. It is recommended that air quality sampling be carried out in the Gun Range area to determine the risks associated from fugitive dust. The results could change the risk factors and change the alternative options. Reliance on modeling may underestimate the risks at this site.

Too little discussion has been provided to the reader regarding the proposed alternatives. For Example discussion under 3b, where the lead-containing soil would be acid-treated and sent to the CFA landfill poses several questions:

a. Has the solubility of the lead within this final end product been determined?

b. Has this treatment methodology been tested?

c. Does the CFA landfill have a double-liner with leachate detection system?

d. Would acidic constituents within the CFA landfill re-dissolve the lead in the cement?

e. What is the volume of soil to be disposed of at CFA versus the volume of acid wash to be disposed of at CFA?

f. Storage criteria's and possible failures for both the soil and the acid wash needs to be discussed.

These issues have not been adequately addressed in the draft clean-up plan; and not adequately presented to the Tribes or public to allow them to make an informed decision on recommending an alternative.

DOE needs to reevaluate the Gun Range, provide air quality sampling data, test sampling of the acid wash alternative, more information on the solubility of the lead-containing cement, and the specifications and characteristics of the CFA landfill. Then, this data should be provided to the Tribes, with appropriate alternatives for the Gun Range clean up plan.

Environmental Comments:

Ecological Risks

The INEEL-wide ecological risk assessment and the 10-04 ecological risk assessment conclude that uncertainties to ecological receptors are present for a variety of reasons. Additionally the RI/FS further states (Section 17, pg. 93) that assessment of organics and metals are not fully characterized and they may have a significant impact on ecological receptors. Because of the uncertainties to ecological receptors monitoring and environmental surveillance are needed factors. The Remedial Action Objectives, listed in the Proposed Plan 10-04 document, should propose a remedial action to address protective methods for the other natural resources, particularly those that pose significant uncertainties. Remedial actions for environmental protective goals are void in the Remedial Action Objectives. This void is of great concern to the Tribes for the preservation of protective methods for ecological receptors.

The present Remedial Action Objectives describe actions to prevent exposures to future inhabitants who may occupy the site for agricultural uses, monitoring hazard quotients, preventing exposures to lead contaminated soils, contact with unexploded ordnance, however a proposed action should be created to address ecological receptors where no data exists. This means that since there are many uncertainties, proposed remedial actions need to be identified and stated where a proposed expectation for clean up would consider the uncertainties.

Additionally, the RI/FS discusses ecological evaluations for species on the INEEL and there is concern about migratory animals that have the potential for carrying contamination off site. Again, the uncertainties are an issue. Evaluative assessments should be maintained to analyze migrations of animals and contaminants off site.

The holistic evaluation of the Tribal Risk Assessment Committee's position was to protect all ecological receptors. Because of the many uncertainties that exist in the ecological assessments, it would benefit those receptors to seriously consider the affects and dangers that each of the contaminated sites **may** have on each of the receptors identified at each site.

TNT/RDX Contamination

A number of remedial actions have already been taken at these sites, at great expense, without a conclusion. There are uncertainties if the removal, treatment, and disposal actions will result in a conclusion.

The reason for clean up is based on the premise of protecting future inhabitants. Does this mean that one the area is remediated it will be opened for development? A recommendation is to wait for a conclusive resolution to the overall TNT/RDX contamination and clean up should coincide with the projected usage for the area.

Gun Range

The description discusses remediation of the berms, kick out area, and the adjacent pond. However, Alternative 3a & 3b also discuss removal of the wooden building and asphalt pad. Will the building and pad be rebuilt or does this signal the end of a gun range at the INEEL? The level of contamination on the structure and the pad is not clearly defined. As a result a

recommendation to not support removing the building and asphalt pad just so they can be rebuilt. A recommendation to support removing these items if there will no longer be a gun range anywhere on the INEEL or if protective measures are institutionalized to prevent future contamination. The alternative also says that recontouring and revegetation will be done on as needed bases, recontouring and revegetation should be required with any planning for contamination clean up.

Unexploded Ordnances

Locating, removing, and disposing of all possible unexploded ordnances is preferred. Alternative 3 states, "various standard survey methods could be used, including a magnetic detection system mounted on a helicopter." What are some of the other methods and what is there cost effectiveness? The Tribes would like to see a list of methods and the cost effectiveness of each. Consideration in the decision making process should include some of the following questions/concerns:

a. What is the success of the helicopter method and how does it compare to the success of other methods?

b. What is the risk associated with the ground crew?

c. What is the risk associated with the helicopter crew?

Alternative 3 also discusses access control measures such as installation or relocation of fences, warning signs, and personnel training. Where would the fences and signs be located? If the location of UXO's is known, with enough accuracy to fence them in, they should be removed, not fenced in. If an alternative is eventually selected, where UXO's are detonated, the air quality impacts need to be evaluated in the risk analyses.

It is understandable that some UXO's will be overlooked, because of that fact that surveys should be done every two years, not five. Also, when resurfacing UXO's are located, at anytime, they should be removed and disposed of immediately. It is very hard to endorse a $16.5 million project, that from the beginning states that some UXO's will remain and only plans to revisit the subject every five years in a review. That seems like a lot of money to throw at a project that will never be completed and won't even be revisited but once every five years.

Cultural Resources/Heritage Tribal Office (HeTO)

The risk synopsis submitted by the Tribes' Risk Assessment Committee and elders discussed the importance of association between natural resources and tribal groups who occupied the INEEL and the surrounding areas. The archaeological record supports this relationship and occupation at the INEEL. Contamination to those resources through direct contact or through the receptors, including the plants and animals, are of great concern. Contemporary cultural uses are still prevalent and fear of contamination in our cultural subsistence or medicinal gathering is a major concern. The effect of residual contamination may cause serious cultural effect to tribal usage and practices that are still alive in our culture. Protection of the tribal resources—cultural, traditional, and archaeological—are crucial to the Tribes.

The summary document (page 7, Summary of Site Risks for WAG 10 sites) uses the words, *within selected areas, and limited hunting:* This discussion assumes boundaries around tribal

interests and concerns while suggesting unlimited determinations for other potential uses. Usage of the words, "selected" and "limited" appears to be boundary driven and suggests that the Tribes are limited to tribal uses based upon the Agencies assumptions/predictive modeling and decisions.

Page 11 of the same document states that the Agencies will select remedial actions for the Tribes without tribal input. Understandably the tribal risk assessment document is holistic in nature, however it will be advisable to include the Tribes in the decision making process in accordance with our interpretations and understandings and in accordance with the DOE Agreement-in-Principle. As stated earlier, it is important that the Tribes are included in discussions regarding this Proposed Plan in order that we can protect our rights guaranteed under our Treaty with the U.S. Government.

The 10-04 document continually states the alternatives, preferred or identified, complies with federal law, however the document fails to identify compliance to the National Historic Preservation Act, application of cultural resources in NEPA, and/or other federal cultural resource laws. It would be detrimental and/or cause delays for the implementation of the alternatives if the plans fail to comply with federal cultural resource laws.

Another unrelated concern is treatment of contaminated artifacts. The Proposed Plan discusses treatment of in situ issue but should also address the process when the clean up activities encounter or cause contamination of tribal, archaeological, or historic artifacts. Additionally it will be important to plan for disposition of the contaminated materials and to avoid traditional cultural places or historic view sheds or places (i.e. historic trails, historic buildings, tribal sacred/traditional cultural places). Advanced planning for the disposition of contaminated materials should also consider removal of undisturbed soil deposits to cover contaminated material discussed in the Proposed Plan 10-04 document.

Ordnance Area

The ordnances located on the INEEL have a significant historical/cultural resource importance for DOE. The National Historic Preservation Act (NHPA) and Section 106 regulations have to be considered in the undertaking actions for ordnance removal. Coordination with DOE's contractor, Bechtel Cultural Resource Management Office will be a vital key that should not be missed in this process.

Another factor to consider is the affect to other cultural resource archaeological/historical properties when clean up of the ordnance area is planned. The shell casings may be archaeological artifacts of the defense period for the INEEL. UXO detonations should be assessed to determine impacts on other resources in the surrounding area. Additionally, removal and transportation of the UXO material may have detrimental consequences to the NHPA. These issues should be assessed and included in the decision making process by the identified Agencies.

As a preferred alternative, Alternative 3 conforms to clean up requirements although fails to address the historical context or mitigation of the historical significance. WWII was a significant historical event that INEEL and the Tribes have in common. Our tribal people were involved in WWII, the men as warriors and the Indian women worked in the factories in the development of the war's weapons. The 10-04 document failed to address these important factions and the assessment should provide an archaeological and historic

mitigation plan to comply with the NHPA for the removal of the ordnance and the clean up of historic places on the INEEL.

TNT/RDX Contamination Sites

It's not clear in the TNT/RDX section of historical recordation for the historic property being affected—WWII artifacts and historical context. Also not clear, in the preferred alternative, is DOE's plan to comply with NHPA with respect to removal of contaminated soil. The preferred alternative seems to be the logical alternative for clean up however the removal and transportation of the contaminated materials should be assessed again while seriously considering affects to cultural/historic resources.

Gun Range

Remedial efforts to remove the lead components at the gun range are also shared by the Tribes. As stated in the Ordnance section, historical considerations need to be taken in removal of properties associated to or identified with the Gun Range. If historical properties are identified compliance with NHPA and Section 106 should be initiated. The preferred alternative suggests removal of soil and removal of other properties in order to get access to the soil. Soil disposal is recommended for on or off site but it's unclear what off site facility will be used for this disposal. The transportation of the soil and other properties presents a question and concern of disturbance to cultural resources. Clarity should be made in the specific plans for such disposals and affects.

Thank you for considering our comments and we look forward to receiving responses in a timely fashion. We look forward to coordinating with DOE in the next evaluation 10-08, the aquifer and ground water. Should there be any questions or concerns, feel free to contact me at (208) 478-3706, 478-3707, or 478-3708.

Sincerely,

Diana K. Yupe, Director/Anthropologist
Tribal/DOE AIP Program

Cc: B. Edmo, FHBC Chairman
R. Pence, DOE AI Prgm. Mgr.
G. Nelson, DOE WAG 10
t.doe aip staff
d.wag10-04 comments

Response to comment 26:

General Comments

DOE is responsible for prudently managing the natural and cultural resources within its jurisdiction and to ensure that the health and safety of the Tribes and the public are protected from potential hazards associated with the activities on, at, or related to the INEEL. DOE strives to meet this responsibility through environmental restoration, waste management environmental surveillance, the environmental compliance program, long-term stewardship, and various other actions and programs. The Tribes are an important and necessary partner in this management process, and DOE appreciates tribal efforts, such as those of the Tribes' Risk Assessment Committee, to promote greater understanding of unique tribal concerns. The assistance of the Tribes' Agreement in Principle (AIP) program in understanding these unique concerns and helping to address them is also greatly appreciated and is critical for the ongoing success of the important relationship between DOE and the Tribes. DOE appreciates this feedback from the Tribes on the Proposed Plan for WAG 10 and is committed to ongoing communication and cooperation.

DOE acknowledges that the AIP provides for a variety of issues of mutual importance to DOE and the Tribes. Cultural resources are a very important part of the Agreement, but are not the only part. Tribal participation in the DOE Environmental Management program, including long-term stewardship, the National Environmental Policy Act program, Environmental Monitoring program, release reporting, and emergency management are also specified in the AIP. DOE is committed to ongoing coordination with the Shoshone-Bannock Tribes' AIP program and government to government consultation to ensure that all tribal interests are addressed at the INEEL. DOE also recognized tribal definitions of cultural resources are much broader than those typically addressed by federal agencies and appreciates the efforts of the Tribes' AIP program to educate DOE in this regard.

Transportation

In the AIP, DOE specifically commits to notifying the designated Tribal representatives immediately in the event of any release of a hazardous substance, pollutant, contaminant, or radioactive material; any transportation accident involving shipments of hazardous or radioactive substances to or from the INEEL, any substantial threat of release into the environment of any hazardous substance, pollutant, contaminant, or radioactive material; or any natural emergency/disaster that occurs on the INEEL that may present an imminent and substantial danger to the public health, welfare or environment of the Tribes. These reporting requirements are applicable to all projects on the INEEL site, including those completed for WAG 10.

Only modest amounts of contaminated material will be transported during the proposed remediation of OU 10-04. For the SFT-02 site, the soil will be processed onsite. Before transport, the processed soils will be stabilized and placed in suitable containers. Hence only a relatively small volume of containerized treated soil will be transported to the CFA landfill or the ICDF; thus, there will be minimal threat of contamination from transport. For the TNT/RDX sites, the amount of TNT/RDX fragments is also going to be small, approximately 25 gallons. All of the recovered fragments will be sealed in an appropriate container for transport. It is estimated that only 800 yd^3 of contaminated soil will be associated with the TNT/RDX cleanup. This relatively small volume of soil will be carefully contained so there would not be a threat of the spread of contamination, even in the event of an accident. For the UXO cleanup, only a small volume of UXO items will be transported in appropriate containers. The spread of contamination from these types of materials is highly unlikely, even under an accident scenario. Appropriate safety guidelines will also be followed to prevent any inadvertent explosion of these items.

Human Health Standards

The first source of information for toxicity values for human health risk assessment is the Integrated Risk Information System (IRIS). This electronic database, prepared and maintained by the EPA, contains information on human health effects that may result from exposure to various chemicals in the environment. IRIS was initially developed for EPA staff in response to a growing demand for consistent information on chemical substances for use in risk assessments, decision-making, and regulatory activities. The information in IRIS is designed to be conservative to support use by a non-toxicologist.

The information contained in IRIS is based on a consensus process that involves interpreting the scientific literature applicable to health effects of a chemical, and using established methodologies to develop values for oral reference dose, inhalation reference concentration, carcinogenic slope factor and unit risk. The EPA recognizes that certain contaminants have specific issues for sensitive sub-groups such as children (for example lead) and has adjusted their toxicity values and or approach accordingly. As new scientific information becomes available, EPA reviews it, as appropriate, and revises IRIS files accordingly. This includes information on sensitive subgroups. Updated information should be included in the 5-year review for completeness. The impact on sensitive subgroups that were not specifically modeled in the risk assessment is an uncertainty in the process. It is considered to have a low chance of making a large impact because of the conservatism of the values and modeling in the risk assessment.

CERCLA (see page 13 in PPO Unit 10-04)

Although not explicitly stated in the proposed plan, significant environmental sampling and monitoring efforts will be performed before, during, and after remediation to ensure the remedial action goals and objectives are met. The costs for sampling and monitoring are included in the total cost for the alternatives; details of the assumptions used to prepare the cost estimates are presented in the OU 10-04 Remedial Investigation/Feasibility Study.

The Tribes will continue to play an important role in assessing the impacts of proposed INEEL activities through the National Environmental Policy Act program. All activities described in the Proposed Plan will be subject to NEPA review before implementation.

Air Quality Comments:

TNT/RDX Contamination Sites

The goal of remediation is to remove all TNT and RDX contamination to a level that would permit unrestricted use of the site. Most of the chemical contamination at the TNT and RDX sites exists as solid fragments of TNT and RDX, which would not become airborne. Also, TNT and RDX are not volatile. While the amount of contamination that could contribute to wind-borne fugative dust will be very small, the need to perform air monitoring will be considered.

Gun Range

Although air monitoring for lead has not been performed at the site, the environmental and health hazards associated with lead in small-arms firing ranges such as the SFT-02 Gun Range are well known and documented. As indicated from the investigation and study of other small-arms firing ranges, the lead from spent bullets poses an unacceptable risk. The preferred alternative to remediate this site is consistent with efforts performed at other small-arms firing ranges across the country. The police forces in larger cities have gun ranges similar to the STF-02 Gun Range, which require periodic remediation. The

Department of Defense also has many gun ranges that are also periodically remediated to remove the lead contamination. Extensive investigation was performed during development of the feasibility study to identify and evaluate methods for remediation of lead contaminated soil at small-arms firing ranges. Based on this investigation, the most cost-effective means to remediate this site was selected as the preferred alternative.

Since the soil washing alternative was not the selected alternative, not as much detail was provided in the proposed plan as for the selected alternative. A detailed description of the soil-washing alternative is presented in the OU 10-04 Remedial Investigation/Feasibility Study. For the soil-washing alternative, the soil would first be processed by physical separation to remove the larger particulate fraction of lead. The soil would then be treated with acid to remove the very fine lead particulate as well as the ionic forms of lead attached to the soil. After such treatment, the soil would have to be conditioned by neutralization and organic additives before it could be returned to the site. The lead in the acid wash liquid would be removed for recycle, and the remaining liquid would then have to be neutralized and stabilized for disposal. Although this treatment technology has been tested and demonstrated at several sites, as described in the OU 10-04 Feasibility Study, the results can be variable and there is a possibility the remediation goals would not be met for the STF-02 Gun Range Site. Thus treatability studies would have to be conducted, which were assumed for estimating the cost of implementing this alternative.

After neutralization and stabilization of the acid wash liquid, the waste would not be toxic and would not be regulated as hazardous waste. Thus, disposal in a landfill with a double liner and leachate collection would not be required. Also, after treatment, there would be no acid constituents, since neutralization removes the acidic characteristic of the waste.

The volume of waste to be disposed of under Alternatives 3a and 3b cannot be accurately predicted until testing is performed. However, preliminary estimates indicate the volume of waste generated requiring disposal could be nearly the same. However, this assumes the acid washing process would be highly effective, and there is insufficient evidence to suggest the acid washing would be so effective, and thus the volume of waste requiring disposal under this alternative would greatly exceed that for 3a.

Environmental Comments:

Ecological Risks

The long-term ecological monitoring is not considered a remedial action and therefore does not have Remedial Action Objectives. The long-term monitoring is considered a limited action under the CERCLA process and has been included in the Record of Decision as such. The long-term monitoring was designed to address the issues that are raised. Specifically, the long-term ecological monitoring at the INEEL will include the following activities:

- Developing a comprehensive surveillance and monitoring plan that supports eliminating the uncertainty in the Site-wide ERA to allow coordination with ongoing air, soils, surface water, groundwater, and vadose zone surveillance and monitoring efforts, to allow coordination with other agency activities (such as sagegrouse studies), and to address stakeholder concerns.

- Developing a schedule for site walk-downs and visual inspections in the WAG site areas to ensure that assumptions in the risk assessment are still applicable.

- Performing yearly sampling and analysis of site-specific flora and fauna for ecological contamination based on location or area-specific field sampling plans. Approximately 10% of these samples will be taken from off-Site locations for background comparison and to monitor off-Site migration of contamination by ecological receptors.

- Providing an annual status report to the agencies to support the 5-year review.

- Performing selected research studies to support the development and understanding of long-term trends in the INEEL's ecology (such as measuring effects to INEEL populations or individual species).

TNT/RDX Contamination

For most of the TNT/RDX sites in question, little to no effort to-date has been made to remove the TNT/RDX contamination. Some remediation was performed at the NOAA site, but it was not completed; hence, this site still has contamination at levels requiring remediation.

The remediation goal is to remove all TNT and RDX to a level that will allow unrestricted use. However, since buried material may remain, routine investigations will be performed at the sites and any contamination detected will be removed. While the site will be under government control for 100 years, it is likely any undetected TNT and RDX remaining after the initial remediation will be removed during the required five-year assessment and review process.

Gun Range

The STF-02 Gun Range has been idle for many years (12) and all associated target practice has been transferred to the main INEEL Weapons Range located to the northwest of Central Facilities Area. There are no plans to reconstruct the STF-02 Gun Range. Removal of the asphalt pad and wooden building will be a final action, and there will be no effort to rebuild the building or construct another paved area. All demolitions on the INEEL are assessed for potential impact to the historic landscape, so this final action will also include an analysis of this type. After demolition and cleanup, the entire STF-02 area will be recontoured and revegetated with native plants in accordance with the most current procedures.

Unexploded Ordnance

The OU 10-04 feasibility study identifies, describes in detail, and evaluates the proven geophysical methods to detect the type of UXO present at the INEEL. Alternative methods considered for UXO detection and mapping included detection systems towed by land-based vehicles and hand-held instruments. Use of a towed system requires that all vegetation be removed, thus requiring vast amount of vegetation to be destroyed. Towed systems are also limited to covering about 50 acres/day as opposed to 200 – 500 acres/day by an airborne system. Use of hand-held UXO detection instruments is very slow and labor intensive, as only a few acres can be covered per day per technician. All methods can be performed safely although the safety requirements are highest for the airborne survey methods. The precise location and extent of fencing can only be determined after a full survey for UXO is made, an assessment of the amount and boundaries of the UXO contamination is established, and a decision is reached as to the magnitude of UXO present that can be practically removed.

Presently, the full extent of UXO contamination at the INEEL is not known. The cost estimates for fencing and access restrictions were based only on the known high-impact UXO areas. After a comprehensive survey is performed and the extent of potential UXO present is understood, a focused program to address the threat from UXO can be developed, which is planned as part of the preferred alternative. Therefore, remediation for UXO will be performed in a phased approach to address areas determined to pose the greatest risk first.

Cultural Resources/Heritage Tribal Office (HeTO)

DOE shares the expressed concerns for protection of all cultural resources on the INEEL, which is within the Tribes' aboriginal territories. This includes those resources that are crucial to the Tribes for cultural and traditional reasons. Under the AIP, DOE is committed to negotiating in good faith with the Tribes concerning tribal access to other undeveloped areas of the INEEL and in identifying, assessing, limiting, and mitigating any impacts of INEEL activities that affect areas covered by the Tribes' Treaty rights. Furthermore, although the INEEL is expected to remain under government control for 100 years, DOE will consider tribal input when developing any plans for future land use and management beyond this industrial period.

The Proposed Plan for OU 10-04 outlines activities that will reduce the overall level of contamination at the INEEL site and will thus reduce any effects of contamination to the Tribes, either directly through on-site visitation or indirectly through tribal usage of significant ecological receptors. Continued involvement of the Tribes in ecological monitoring and ongoing cleanup decisions at the INEEL will assist DOE in developing appropriate mitigation strategies for the cultural effects to tribal usage and practices that are still alive and important among Indian people today.

National Environmental Policy Act reviews, including activities to ensure compliance with the National Historic Preservation Act, will be conducted for all proposed actions in the OU 10-04 Plan. These evaluations will focus on all activities associated with the proposed cleanup, including those at the contaminated site and those associated with the cleanup but at some distance. Sources of fill for capping, access, egress, and utility upgrades, as necessary, are all included in this latter category. As provided in the Agreement in Principle and implemented through the INEEL Cultural Resources Working Group, the Tribes' AIP program is involved in all evaluations of this nature. At a minimum, this involvement will include opportunities for tribal AIP personnel to participate in cultural resources surveys, evaluations, assessment of effects, and mitigation as necessary. Tribal participation in these activities is critical to augment standard cultural resource procedures and ensure that tribal experts are involved to identify all pertinent tribal resources and concerns, including tribal sacred/traditional cultural places and /or viewsheds.

The nature of the contamination present within OU 10-04 (i.e. lead bullets, chunk TNT/RDX, UXO) is such that there is no likelihood that tribal, archaeological, or historic artifacts will be impacted directly. It is also unlikely that the proposed cleanup activities will change the nature of the contaminants to cause any contamination of these items. All ground disturbing projects at the INEEL contain strong provisions for stopping work in the event of discovery of sensitive cultural materials. Procedures for immediate notification of the Shoshone-Bannock Tribes are also in place for these situations. Contaminated cultural materials have never been discovered on the INEEL during surface surveys or inadvertently during project activities. If contaminated cultural materials are discovered, they will be evaluated on an individual basis and their disposition will be determined using the guidelines established in DOE's November 17, 1995, Guidance Memorandum, "Application of Order DOE 5400.5, Requirements for Release and Control of Property Containing Residual Radioactive Material," and the DOE ALARA (As Low As Reasonably Achievable) Standard.

Ordnance Area

All activities outlined in the OU 10-04 Proposed Plan will be preceded by NEPA analyses that will include National Historic Preservation Act Section 106 compliance. As provided in the AIP, the Tribes are involved in all such investigations completed at the INEEL. By law, DOE is also obligated to utilize the services of professionals in the fields of historic preservation, archaeology, and/or history in the INEEL cultural resource compliance program. Presently, the contractor through the INEEL Cultural

Resource Management Office provides these services. This participation will be important in all future analyses of the potential impacts of OU 10-04 activities on all cultural resources, including historic resources associated with the Ordnance Testing Period. These historic resources, including individual shell casings, will be evaluated within the historic contexts developed for the INEEL, and decisions regarding their protection will be made within a standard approach developed to assess their importance within the defined context. Should detonation of UXO in place be needed because of health and safety concerns, an assessment of potential effect to cultural resources would be completed and all resulting activities would be conducted within the bounds of safe practice.

DOE agrees that World War II was a significant historical event that INEEL and the Tribes have in common and acknowledges the important contributions made by Native Americans to the defense of our nation at that time and beyond. DOE recommends that the Tribes develop a historic context for this important history so that artifacts and sites significant to the Tribes associated with this period can be identified and protected. In the interim as this context is being developed, the DOE will continue to preserve the remnants of this period that are relevant to the importance of World War II, to the history of the INEEL, Idaho, and our nation.

TNT/RDX Contamination Sites

As stated above, National Environmental Policy Act reviews, including activities to ensure compliance with the National Historic Preservation Act, will be conducted for all proposed actions in the OU 10-04 Plan. These evaluations will focus on all activities associated with the proposed cleanup, including those at the contaminated site and those associated with the cleanup but at some distance. Sources of fill for capping, access, egress, and utility upgrades, as necessary, are all included in this latter category. As provided in the Agreement in Principle and implemented through the INEEL Cultural Resources Working Group, the Tribes' AIP program is involved in all evaluations of this nature. At a minimum, this involvement will include opportunities for tribal AIP personnel to participate in cultural resources surveys, evaluations, assessment of effects, and mitigation as necessary. Tribal participation in these activities is critical to augment standard cultural resource procedures and ensure that tribal experts are involved to identify all pertinent tribal resources and concerns, including tribal sacred/traditional cultural places and/or view sheds.

Gun Range

Again, as stated above, NEPA reviews, including activities to ensure compliance with the NHPA, will be conducted for all proposed actions in the OU 10-04 plan. No structures will be demolished without this review.

Technical and Legal Issues

All currently identified technical and legal issues associated with the WAG 6 and 10 selected remedies have been addressed as described in the Decision Summary (Part 2 of this ROD). If other issues are identified at a later time, such as during the development of the remedial design or the implementation of the remedial actions, resolution will be achieved through the process defined in the Federal Facility Agreement and Consent Order (DOE-ID 1991).

Responsiveness Summary References

DOE-ID, 1999a, "Work Plan for Waste Area Groups 6 and 10 Operable Unit 10-04," *Comprehensive Remedial Investigation/Feasibility Study*, DOE/ID-10554, April 1999a,

DOE-ID, 2000, *Agreement in Principle Between the Shoshone-Bannock Tribes of the Fort Hall Indian Reservation and the Idaho Field Office of the United States Department of Energy,* September 27, 2000.

DOE-ID, 2001, *Comprehensive Remedial Investigation/Feasibility Study Assessment for Waste Area Groups 6 and 10 Operable Unit 10-04*, DOE/ID-10807.

ESER, 2002, *Idaho National Environmental and Engineering Laboratory Site Environmental Report,* CY 1999. DOE/ID-12082 (99).

VanHorn, R. L., N. L. Hampton, and R. C. Morris, 1995, *Guidance for Conducting Screening-Level Ecological Risk Assessment at the INEL*, INEL-95/0190, Rev. 1, Lockheed Martin Idaho Technologies Company, April 1995.